DOCUMENT RESUME

ED 375 645 FL 022 483

TITLE	Grammar and the Lexicon. Working Papers in Linguistics 16.
INSTITUTION	Trondheim Univ. (Norway). Dept. of Linguistics.
REPORT NO	ISSN-0802-3956
PUB DATE	93
NOTE	157p.
AVAILABLE FROM	Dept. of Linguistics, University of Trondheim, N-7055 Dragvoll, Norway.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	University of Trondheim Working Papers in Linguistics; n16 1993
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Foreign Countries; Form Classes (Languages); *German; *Grammar; *Language Patterns; Language Research; Linguistic Theory; Prefixes (Grammar); Semantics; *Spanish; Verbs; *Vocabulary Development
IDENTIFIERS	Anaphora; Clitics; Ergativity

ABSTRACT

In this volume, five working papers are presented. "Minimal Signs and Grammar" (Lars Hellan) proposes that a significant part of the "production" of grammar is incremental, building larger and larger constructs, with lexical objects called minimal signs as the first steps. It also suggests that the basic lexical information in grammar is essentially semantic in nature, with syntactic properties deducible by general principles. A system of features representing the most important properties in lexical description is outlined. "Derived Delimiters" (Anneliese Pitz) discusses effects of prefixation in German with respect to the delimitedness of a situation: in some cases, prefixes act as delimiters together with verbs, while in other cases they select the spatial extent of the object as delimiter. In "The Lexical Semantics of Ergative Verbs in German" (Anja J. Seibert), grammatical behavior of these verbs is explained by their semantic, not syntactic, specification. "The Monotonic Participant" (Ingebjorg Tonne) sketches a system relating the monotonic participant to the verb through aspectual features. Two principles are derived in the system, semantically restricting verb environments and narrowing syntactic possibilities of construction. "Semantic Information in "se"-Constructions in Spanish" (Angel Miguel Almagro) looks at constructions in which the clitic is used anaphorically related to the subject. Each paper contains references. (MSE)

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UNIVERSITY OF TRONDHEIM

WORKING PAPERS IN LINGUISTICS

"Grammar and the Lexicon"

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MINIMAL SIGNS AND GRAMMAR

Lars Hellan
University of Trondheim

This paper presents and illustrates some ideas concerning the interaction between the Lexicon and Grammar, in the context of a general approach set forth in Hellan and Dimitrova-Vulchanova, forthcoming,[1] which conceives Grammar largely as a set of *conditions on properties of constructions*, these properties being represented formally by what we call *global features*.[2] Among the upshots of this approach is that a significant part of the 'production' dimension of Grammar can be seen as incremental, building up larger and larger constructs, with lexical objects called 'minimal signs' as the first steps. It also allows us to construe, in a very precise way, the basic lexical information in a grammar as essentially semantic in nature, with syntactic properties deducible by general principles.[3] To give a picture of this view, we outline a system of features representing what we take to be the most important properties relative to lexical description, and illustrate how the analysis of sentential constructions can be made to follow from the description of their lexical heads.

As the focus of this presentation is on areas that only to a small extent distinguish among current theories of syntax and semantics, we will not try to identify the present approach as more or less close to this or that framework; we share some salient features with the approach of Anderson 1992, but resemblance to frameworks such as LFG (e.g., Alsina 1992) and GB (Chomsky 1992), as well as that of Talmy 1987 and Jackendoff 1990, should be recognized as well.

1. General assumptions

The present proposals involve the following general assumptions:

(A) A grammar is a recursive characterization of the possible constructions of a language, where 'construction' includes conceptual, syntactic, morphological and phonological properties. As another word for such a combination of properties constituting a construction, we use, with a tenuous link to the Saussurean tradition, the notion *sign*. Sentences, thus, represent what we may call 'complex signs'.[4] The *Grammar* is constituted

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[1] See also Dimitrova-Vulchanova and Hellan 1991.

[2] Another part of the background for this paper are the lexicon projects TROLL and Nordlex.

[3] Among authors who have suggested this, we may mention Hale and Keyser 1987.

[4] In the Saussurean framework, this notion would be a contradiction, since signs there are exclusively words (corresponding to our 'minimal signs'; this is what makes the link tenuous.

by the rules and principles performing the recursive characterization of signs.

(B) The formal building-blocks of Grammar are of two kinds, regardless of what aspect (syntactic, conceptual, etc.) is considered:

(i) binary features, which may be specified or non-specified;
(ii) constituents, and hence, constituent structures.

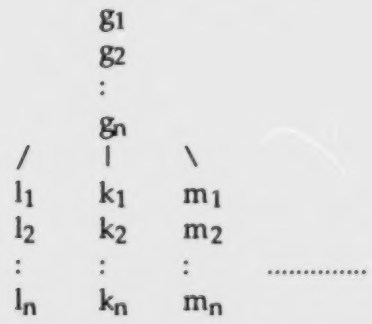
(C) The rules and principles of Grammar are essentially *static*. They divide into two kinds, likewise regardless of what aspect (syntactic, conceptual, etc.) is considered:

(i) feature-entailments;
(ii) rules for 'spell-out' of feature-combinations into constituent structures.

(D) Construction types are 'holistically' characterized in terms of what we call *global* features, reflecting both syntactic and semantic properties of constructions as wholes. Rules for 'spell-out' of combinations of global features determine the constituent structure of the construction; the constituents are in turn characterized by what we call *local* features relative to the global ones. The feature-entailments regulate which syntactic and semantic global features can occur together, and in this way these entailments are what regulate the range of construction types.

Abstractly illustrating, the features characterizing the top node of the configuration (1) (each of $\{g_1, g_2, \ldots g_n\}$ being a specified binary feature) are global, whereas those characterizing the constituents are local; at least a subset of the features $\{g_1, g_2, \ldots g_n\}$ gives rise, through spell-out rules, to the particular constituent configuration in question (in the category specification of which the local features are crucial), and the constellation $\{g_1, g_2, \ldots g_n\}$ as a whole is formally accepted by the general feature entailment rules.

(1)



To the extent that the entire constituent structure in (1) is predictable from the global specification $\{g_1, g_2, \ldots g_n\}$, we say that (1) is an *unfolded* version of

the specification (2), which thus unambiguously represents the same object as (1) represents; (2) is called a *purely global* representation:

(2) g_1
g_2
:
g_n

(E) A special type of sign is called a *gestalt:* this type of sign is constituted by conceptual, syntactic and morphological features occurring together.[5] A gestalt can be either purely global or unfolded. Thus, either of (1) and (2) is a gestalt in case, in the set $\{g_1, g_2, \ldots g_n\}$, some g are syntactic/morphological and some are conceptual.

(F) Although the Grammar as a system of rules is static, we may still recognize some dimensions of 'dynamics' of Grammar, residing in the following types:

(i) expansion (of feature-characterization);
(ii) saturation;
(iii) derivation, or 'reanalysis'.

Saturation formally reflects a unification of the specification of a constituent in a structure like (1) with another sign, namely one containing morpho-phonological information. This type of relation is a step in deducing from the grammar what are possible 'complex' signs of the language.

Expansion consists of the *addition of specified features* to a given structure like (1) or (2). This dimension crucially assumes the availability of *non-specification of features*, in the sense that in structures like (1) and (2), all grammatical features except those explicitly entered in the structure as specified, may be regarded as *un*specified. Such structures can then be enlarged through the addition of new specified features.

Derivation, or 'reanalysis', is commented on in section 6 below.

(G) The *Lexicon* provides the set of recursive bases for the characterization of signs. Such a base is called a *minimal sign*. This is the minimum of information about a given word from which the grammatical behavior of that word can be deduced. Formally speaking, the minimal sign consists of a grammatical category, a phonological form, a set of conceptual features, and, in some cases, certain syntactic features reflecting the grammatical context of the item. Thus, a minimal sign, when constituent structure is not included, is on the form (3a); 'a' here represents the morpho-phonological specification. If constituent structure is included, it is

[5]This construct has interesting similarities with what Grimshaw 1990 calls 'Argument Structure', but space prevents us from exploring the similarities here.

on the form (3b) (i.e., in an unfolded version), where the node terminated by 'a' may be counted as the head of the constellation, with ensuing possible equivalence between $\{g_1, g_2, \ldots g_n\}$ and $\{l_1, l_2, \ldots l_n\}$:

(3) a.

g_1
g_2
:
g_n
|
a

b.

g_1 g_2 : g_n

/ | \

l_1 k_1 m_1
l_2 k_2 m_2
: : : .....
l_n k_n m_n
|
a

The Lexicon also provides the set of more complex forms, morpho-phonologically specified, which do not result from regular saturation. This aspect of the Lexicon is relevant to derivation or reanalysis, and is only briefly touched upon here.

Apart from the Lexicon, we do not, at the outset, assume any special 'stages' entitled to be recognized as 'levels of grammar' in the 'dynamic' dimension of grammar. For instance, there is no stage of 'lexical insertion' as a level of the grammar itself, nor any 'deep structure'. However, it will be useful to conceive of different degrees to which characterization takes place, along the different 'dynamic' dimensions of characterization - expansion, saturation and reanalysis. The formal object on which these types of characterizations accumulate starts out as a minimal sign, and throughout the accumulation process it has the status as a *gestalt frame*. A *frame* is a structure like (3b) where at least some constituent slots have not been saturated, and it is a *gestalt* frame insofar as the features represent a combination of syntactic and conceptual information. *Expansion* now consists of enlarging the sets of specified features characterizing the nodes. From the initial set of features characterizing the minimal sign, which reflect properties of lexical (as opposed to functional) words, the enrichment of the feature structures will comprise (for languages where relevant) constructional phenomena like small clause formation and verb serialization, and eventually include more abstract, functional features of sentence structure, such as (again varying across languages) tense, auxiliary verbs or markers, reflexive markers, clitic doubling and other cliticization phenomena. In this perspective, *saturation* can be regarded as a further enrichment relation, augmenting the constituents of gestalt frames with phonological and other material. Both expansion and saturation can thus be regarded as *unidirectional*, or *monotonic*, operations on gestalt frames (initially on minimal signs), in that they unidirectionally 'pump up' the

feature specifications, with whatever constituent structural unfolding the created feature combinations engender through the spell-out rules.

This is not to say that Grammar, as a 'dynamic' system, in all respects can be regarded as monotonic - it is so only in so far as we consider the set of minimal signs and the dimensions of expansion and saturation together. The reanalysis processes, in contrast, which operate both on 'sub-word' (through affixation and incorporation) and phrasal level, are not monotonic in the sense now in question.

We now illustrate the picture we have drawn. First, we introduce some of the main features that play a role in characterizing 'lexical' minimal signs (section 2 and 3), and then we exemplify the composition of minimal signs and the process of extending minimal signs to gestalt frames, subject to feature-entailments and syntactic spell-out rules (sections 4 and 5). The constructions used for illustration here are especially small clause formation and implicitation in English and Norwegian. Section 6 remarks on reanalysis, and section 7 summarizes the emerging picture of Grammar and Lexicon.

2. The content of the basic features

We distinguish between syntactic and conceptual features. The main types of conceptual features are introduced first, and then the syntactic ones.

Lexical (as opposed to functional) words are interfaces between Grammar and general cognition. In the latter capacity, they represent schemata of experience and activity, in the former, they are the informational cores of sentences and other complex signs, and as such, 'sewn' according to the roles they play in the syntactic and morphological patterns of the signs. The concern of the present model of a Lexicon is the relation of words to Grammar. In this respect, a full representation of the cognitive capacity of a word is irrelevant; however, we claim that certain general aspects of this capacity are grammatically relevant, and a key ingredient of a grammar-related lexical description will be the identification of this aspect. The aspect will be called *criteriality*, and is explained as follows.[6]

The meaning of a linguistic expression may be said to consist of criteria for deciding whether a given item is a referent of the expression. For clause meanings, the items in question are situations, and at the broadest level, we can distinguish between two types of criteriality of situations: the criteria can pertain either to directly *observable* features of the situation, or to what will be *entailed* by the situation.[7] The main item to which these criteria are tied is the verb. Most verbs of the basic vocabulary have the observationally based type of criteriality, and this is the type on which we

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[6] A similar notion, named 'identification', is developed in Johnsen 1991

[7] An instance of the entailment type is the verb "know": the criteria for whether a sentence headed by "know" applies to a situation, pertain to whether the complement of the verb ('p' in "x knows that *p*") is true or not; i.e., "x knows that *p*" entails "*p*". On a classification of verbs along these lines, see Karttunen 1971.

will focus in the following, and to which we will generally refer by the term 'criteriality'.

One parameter of criteriality resides in the types of *criterial properties* involved, which we group into 'coloring', 'space relatedness', and 'existence'. *Coloring* means that certain properties or types of behavior of the argument itself are criterial, to be assessed by inspection of the argument; thus, metaphorically speaking, the argument entity is 'colored' by the relation. *Space relatedness* means that the criterial factor is the spatial coordinates of the argument, relative to other defined spaces or landmarks, expressed or understood. This parameter divides into at least three subcases: *spatial location; spatial fit*, also referred to as *posture;* and *orientation*. In spatial fit, the landmark is the immediate surroundings of the argument entity, often contiguous to it, whereas in spatial location, the landmarks of criterial importance are less close to the entity. In orientation, what counts is the orientation of fronts and other sides of the entity, independent of possible movement and contact relative to the reference space. *Existence* means that the criterial factor pertains to coming into, or passing out of, existence - to be referred to as *actualization* and *annihilation*, respectively.

For example, in "John ran", John is the entity to which the criteria associated with 'run' apply, one criterion being one of coloring, namely that John makes certain leg movements, and one being a criterion of space relatedness, namely that he gradually changes position in space. In "John ate the cake", criteria of coloring apply both to John (by his movements) and to the cake (its being subjected to the penetration of teeth or other material), the latter also having the existence parameter applying to it (by its gradual disappearance).

Another parameter resides in the distribution of criteria on the participants of the situation, if it has more than one participant: in the case of "eat", as just mentioned, both participants are criterial, whereas in "John broke the window", it is only the window which has criteriality, in the form of coloring - the exact behavior of John is immaterial, as long as his responsibility can be recognized.[8] To further illustrate, in "John fell into the pit", 'fall' is the relation, its criterion being one of space relatedness, namely that there is a movement downwards on the part of the entity expressed. The notion 'downward' presupposes a reference space, which need not be specified if clear from the context. As John need not at all have contiguity with this space, this is an example of spatial location criteriality.

Quite often, a verb is accompanied by an expression which specifies an instantiation of the type of criteriality inherent in the verb. Such expressions we refer to as *criterial spell-outs*. Examples of the various types of such spell-outs include the following, with the spell-out property italicized and the argument in which this property is found underlined:

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[8]Thus, the conditions pertaining to John's role here relate to the entailment dimension.

(4) Coloring: John cut the grass *short*
John broke the glass *to pieces*
Existence: The flower faded *away*
He ate the banana all *up*
Space relatedness:
Location: He went *away*
He stayed *in Uruguay*
John fell *into the pit*
Posture: John sat *in his chair*

For instance, in "John fell into the pit", the expression "into the pit" instantiates the criterial factor of downward movement tied to "fall". In a similar way, "short" in "John cut the grass short" is the criterial spell-out of the object-related criterion associated with "cut", and likewise for "to pieces" in association with "break"; these spell-outs are both spell-outs of coloring.

The ways in which the criteriality factors play a grammatical role will be demonstrated in sections 4 and 5. To represent these factors, we define features corresponding to them, made accessible to the rules of Grammar; we thereby avoid specifying all semantic details of the words in question, but separate out those aspects of the 'criterial' semantics which is grammatically relevant.

Another conceptual dimension resides in what we may call (thematic) *roles*. (They represent another, and more standardly recognized, dimension of abstraction over meanings.) It should be noted that there is an ambiguity in the notion 'role' as commonly used. On the one hand, it can be used simply as a way of keeping participants in a situation apart; 'roles' in this sense are mutually exclusive, in that no participant will be two participants. On the other hand, 'role' can be used for any type of property characterizing parts played by participants in an activity, such that a participant may conceivably have more than one such property at the time.[9] This is the sense in which we use the term 'role' here.

A first division in role types may be drawn between those properties or roles that pertain to spatial movement or orientation of participants, to be called *spatial* roles, and those that are connected with the participant as such, called *inherent* roles. Inherent roles in general classify both criterial arguments (especially through coloring and existence) and non-criterial arguments, one example being 'cause' for a verb like "break". Spatial roles essentially reflect the domain of space-related criteriality, the main such role being the one described later as a 'pivot' or 'monotonic participant'. We now describe some of the inherent roles in detail.

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[9] We leave open whether more than one participant may have the same property. The idea that a participant may have multiple role properties is also developed in Jackendoff 1987, 1990, through a system of 'tiers' of conceptual representation. His multiplicity of tiers may be compared to our multiplicity of co-occurring features, as illustrated throughout, e.g. in (22). For a comparison, see Hellan and Dimitrova-Vulchanova, forthcoming.

One type of inherent role is characterized by *force* or *energy* emitted by the participant; the relation is here characterized as a *force*, and the participant emitting the force is a *source*. Another type is the *perceiving* relation, whose main participant is a *perceiver*. A third type of relation is the *controlling* relation, whose main participant is the *controller*: having this role means that the participant is in a position to willfully bring the situation to an end.

Forces, controlling and perceiving relations are quite often *polarized*, or *asymmetric*, involving two arguments which we may call the *poles* of the relation, such that one pole has in some way or other a dominant function over the other; hence they will be called, respectively, the *dominant* pole of the relation and the *non-dominant* pole. The prototypical polarized relation is the *force*, as exemplified in "John kicked the ball", but the polarized type comprises purely controlling relations as well, as in "John owns the house", and perceptual relations, as in "John sees the house". The non-dominant pole of a force is called the *target* of the force, the non-dominant pole of a controlling relation is called the *controllee*.

It should be noted that forces can be expressed without either source or target, some possibilities being exemplified in (5):

(5) a. it is raining
b. John ran
c. the stone hit the window
d. John shot plastic bullets (against me)
e. the water is boiling

In (a), there is just the force, with neither source nor target, expressed nor in the situation itself. In (b), there is a source but no target. In (c), "the window" must count as the target of the relation, but "the stone" is hardly to be perceived as a source, hence this is a case where the force obtains with a target but without a source. Here the constituent "the stone" will be called a *vehicle* of the force expressed: this is an entity which is so to say 'carried along' by the force, or, conversely, an entity 'hosting' the force. This category is exemplified also by "the water" in (e) and "plastic bullets" in (d). Vehicles are the prototypical non-poles, their presence being no contribution to asymmetry. As a result, they occur not only in non-polarized images like the above, but also as a third element of a polarized image, like the italicized items in the examples in (6):

(6) a. John hit the window with *the stone*
b. the vulcano covered the field with *ashes*

In (a), the vehicle may be counted as *instrument* of the force, a status it gets when the source is controlling; in either case, its non-pole status prevents it from upsetting the asymmetry established by the other participants.

Sources may be either controlling or not: a verb like "kick" generally favors a controlling source, whereas the vulcano example (6b) has a non-controlling source. Sources, moreover, as said above, may be either criterial or not. Thus, "John" in "John broke the window" is not criterial with regard to the event, but does count as a source (or 'cause'); in "John ate the carrot", in contrast, "John" is both a source and criterial.

That "John" is criterial in a case like "John ate the carrot" means that his activity is *identified*, something which is not the case in "John broke the window". Based upon this, we make a principled distinction between *identified* and *non-identified source activity*, correlated with whether the source is criterial or not. When the source activity is not identified, it is also impossible to assess what type of direct impact it has on the target, which is to say that the target, with regard to the non-identified act, is non-criterial as well (whereas, e.g.. with a verb like "break", it is criterial with regard to the change resulting from this unidentified act - that is, the state of brokenness). Reflecting this distinction, we distinguish between two types of polarity of forces, *source polarity* belonging to an image when the source activity is identified, and *global polarity* when either there is source polarity, or the source activity is *non*-identified, but *the direct object undergoes change.* "The window" in "John broke the window" is thus a target pole of global polarity, but not a target pole of source polarity.

Let us now state briefly and very informally how some of the conceptual notions now considered relate to grammatical realization:

(7) a. In a polarized relation, the dominant pole is realized as subject, and the non-dominant pole as object.
b. Sources are realized as subject.
c. Controllers are realized as subject.
d. In the absence of participants represented as source or controller, a vehicle is realized as subject

These rules define part of the *canonical mapping* between the conceptual dimension and the syntactic dimension.

A further type of role is that of the *pivot*, also called *monotonic participant*. Among the types of change that may be found in a situation, one type is characterized by having what we may call *persistent directionality;* in the terms of Tonne 1992, such change is *monotonic* (and in the terms of Tenny 1987, *undifferentiated),* as opposed to the activity exercized by sources generally. A participant undergoing monotonic change may be called a *monotonic participant*, or *pivot*, and a situation, in so far as it has a component of monotonicity, a *monotonic situation;* we also call it a *transition*. Situations may be monotonic in one respect and still non-monotonic in another; indeed, it is possible even for a single participant to be monotonic in one respect and differentiated in another, as, for instance, in "John ran along the road": here one component of John's behavior is differentiated, involving repeated leg movements and so on, whereas

another component is monotonic, namely John's traversal of the path leading along the road. Only in the latter respect is John counted as a monotonic participant.

Monotonic behavior may be construed as defining a *scale* along which the changes involving the monotonic participant may be represented as successive values. Thus, if the change is a change of location, the scale is constituted by the successive positions occupied by the monotonic participant along the path traversed. If the change involves inherent qualities, the scale concerns the development of the quality in the monotonic participant, as with "ripen": the monotonic participant here goes, unidirectionally, through the series of values of ripenness obtaining in the participant itself. If the change concerns existence, through gradual increase or decrease of the mass constituting an entity, the scale concerns the successive sizes or amounts of that entity reached through the persistent development, and the monotonic participant in this case is this entity successively coming into or out of existence.

Another way of viewing a transition is as a sequence of situations, or images, tied together by the monotonic participant, such that in each pair of consecutive images in the sequence, the second member is a development from the first member with regard to properties of the monotonic participant.

In the limiting case of transitions, the sequence of images has only two members, or the scale only two values; such transitions may be called *punctual* transitions, exemplified by "break".

We distinguish between *completed* and *non-completed* transitions. A transition is *completed* when it relates to a scale for which a delimiting point is expressed, and the change has reached that delimiting point of the scale. This last point, or the corresponding image, we call the *result* of the transition. Punctual transitions are necessarily completed.

A transition is either encoded in the meaning of the verb, or expressed through the larger construction. Examples of the former type are "John ate the apple" and "the apple ripened", an example of the latter type is "John licked the jar empty". Transitions encoded in the verb meaning may be either completed or non-completed, whereas constructionally expressed transitions are always completed. We first discuss transitions encoded in the meaning of the verb.

For such transitions, the scale provided by the verb may or may not be delimited; common to all cases is only that the scale has direction. Whether the transition itself counts as completed depends in part on syntactic factors of the construction, these being primarily i) whether the monotonic participant, when not expressed as subject, is expressed as direct object or prepositional object, and ii) whether an adverbial or predicative expression marks an 'end of path' or not. Consider first non-punctual change with regard to existence, that is, gradual coming into or passing out of existence, the latter exemplified by "eat". "Eat" conceptually presupposes something eaten, and this thing in each case determines the delimitation of the scale of

the monotonic aspect of the eating event in question. Thus, if what is eaten is an apple, the size and texture of the apple determines the scale, the delimitedness of the apple inducing the delimitedness of the scale. Completion of the eating event now means that the event progresses to the final point of this scale. This will be the case if the expression for the apple functions as a direct object for the verb, but not if it is embedded in a prepositional phrase. That is, (8a) expresses a completed event, (8b) a non-completed event.

(8) a. John ate the apple
b. John ate of the apple

The same can be observed for a verb like "paint", which expresses change of quality rather than existence, but still has its scale determined according to the size of some object, here the surface of whatever is painted. In Norwegian, thus, a pair similar to (8) is (9), the use of a direct object again expressing the circumstance that the event reaches the end of the scale:

(9) a. Jon malte huset
'Jon painted the house'
b. Jon malte på huset
Jon painted on the house
'Jon did some painting on the house'

For 'internal' properties like ripenness, delimitedness of a transition may again be induced by the type of thing ripening, but now *not* as a reflex of the size of the thing. The completion role of the direct argument is less salient in such cases.

For both existence and coloring, we may thus say that once the verb, together with its monotonic participant, establishes a delimited scale of transition, if that participant is expressed as a direct object, the image is completed, whereas if the participant is expressed as a prepositional phrase, the transition is not completed. If the montonic participant is expressed as subject, as in "the apple ripened" or "the apple shrank", the completed reading is the most likely reading (but perhaps not necessarily, such that context may bring out the potential for non-completion).

When the change happens with regard to location, that is, a scale which is not related to the size or quality of the monotonic participant, then both delimitedness of the scale and completion of the transition are induced by a delimiting adverbial expression, like in "John ran into the house".

For punctual transitions, both the delimitedness of the scale and the completion of the transition are determined by the verb alone. Thus, even where a direct object can be used, as in "win the race" vs. "win", the punctual construal is obligatory for both.

We may sum up the above in the following regularities, as a continuation of the mapping principles in (7) (being 'co-participants' - cf. (10c) - means being participants of the same relation):

(10) a. In the absence of a source, a controller or a vehicle, a monotonic participant is realized as subject.

b. In a completed transition of coloring or existence, if the monotonic participant is not realized as subject, it has to be realized as direct object.

c. A monotonic participant is realizable as a prepositional object only if it is a co-participant with a color- or existence-criterial non-monotonic participant - i.e., if it is the target pole of a source polarity relation.

The notions of transition and delimitedness are often seen as *aspectual* notions. This dimension concerns the way in which the internal structure of an image is mapped upon the temporal dimension. One example is the distinction *punctual - non-punctual (durative)*, which was characterized above. The class of punctual verbs includes both criterial and non-criterial verbs, like "hit" and "win", respectively; it includes both polarized and monadic verbs, like "hit"/"win" and "explode", respectively; and the verbs can have either a controlling or a non-controlling reading.

Besides punctuality, the most central aspectual notion is *telicity*. For an image/situation I to be *telic* means that if some event E is modelled by I, then no *subpart* of E can count as being modelled by I, nor can any *extension* of E. Telicity is related to completedness: thus, in the contrast in (8) - "John ate the bread" vs. "John ate of the bread" - the latter, which is incompleted, is atelic, meaning that the event can be both divided and extended and still be describable by the sentence "John ate of the bread". "John ate the bread", in contrast, cannot be applied to a point prior to where the bread is completely eaten, nor can it be applied to any stage beyond that point. The conditions for telicity of a transitional construction are thus those stated above concerning completedness, with the addition that the arguments represent what may be called *specified amounts*: thus, in "John ate the apple", both arguments are specified amounts and the construction is telic, whereas "John ate apples" is an atelic construction, due to the object argument being a non-specified collection of individuals.[10] Likewise there is a non-specified amount object in "John drank wine", the participant this time being even non-individuated, and again the construction is atelic. In constructions with punctual verbs, non-specified amount subjects and objects again induce atelicity; examples are "volcanoes exploded every day", "John won prizes every week", and so on.

Another instance of completedness/telicity is constructions like "walk a walk", "live a long life", etc., where what is completed is not a

[10]For discussion of these notions, see, e.g., Verkuyl 1989.

transition, but rather a 'non-targeted differentiated activity; the type of 'cognate object' exemplified here in a way 'frames in' the event, again on the condition that it represents a specified amount. The main semantic factors on which telicity depends can thus be summarized as in (11):

(11) telicity requires

of the	*and*	of the
verbal constellation		participants
punctuality, *or*		specified amount reading
completed transition, *or*		
'framing in' of activity		

Having now outlined most of the conceptual factors of relevance to gestalts/signs, we introduce a few syntactic notions. We define the *topology* of a clause-gestalt as consisting of a verb, on the one hand, and one or more *points* on the other, of which one functions as the *subject* and another as the *direct object*; a third point is the *predicative*, understood as an extension of the notion from Jespersen 1924: when combined with a *predication subject*, this constellation expresses the same propositional type of content as a sentence does. Whenever there is a direct object (DO), the predicative takes this as its predication subject, otherwise it takes the subject (SU) as predication subject. Thus, in "John painted the house red", "red" is a predicative with "the house" as its predication subject; in "the bottle remained cold", "cold" is a predicative with "the bottle" as predication subject.

We distinguish between *intransitive clauses*, which have a SU but no DO, and *transitive clauses*, which have both a SU and a DO. Derivatively, we define an *intransitive verb* as a verb heading an intransitive clause, and a transitive verb correspondingly. Since a given verb can often occur in both types of construction, this is not a classification of verbs as lexemes, but of verbs according to types of occurrence.

If a clause has a predicative, we call it a *branching clause*, meaning that an additional predication 'branches off' from the verbal predication. Such a clause may, but need not, have a DO, hence there can be both transitive and intransitive branching clauses. The part of the clause which is defined for the verb in isolation (comprising SU, verb and possibly a DO) we call the *root* predication, the 'branch' part together with the predication subject we call the *dependent* predication.[11]

[11]Among notions that are so far not represented in the topology, but belong there, is *indirect object*; nothing , however,will be said about this notion here.

3. Towards a formal analysis

Most of the notions introduced in section 2 will now be recast as values of binary features. After listing the features, with definitions reflecting the original notions, we give some general indications as to how the distribution of features is regulated, and illustrate their use in the analysis of an actual sentence. We then turn to minimal signs and their expansion into gestalt frames.

We start with features representing the syntactic dimension of the gestalt. The *topology*, i.e., the structural skeleton of the gestalt, can be defined in terms of the features '**±transitive**' and '**±branching**', applied in accordance with the usage introduced above; they represent the various syntactic topological options illustrated in (12):

(12) a. [-transitive, -branching]: SU V
b. [+transitive, -branching]: SU V DO
c. [-transitive, +branching]: SU V Pred
d. [+transitive, +branching]: SU V DO Pred

The constituent categories 'SU', 'DO', 'V' and 'Pred' are in turn decomposable into features, as follows; each feature is defined in terms of its positive value:

(13) **±topological**: applies to all topological categories
±point: applies to SU, DO and Pred, as opposed to V, relevant only given '+topological'
±argument: applies to SU and DO, relevant only given '+point'
±subject: applies to SU, relevant only given '+argument'

Among '-topological' constituents, various distinctions will be relevant, a basic one being the one between *visible* constituents and *implicit arguments*; the feature representing this difference will be simply '**±visible**'.

We then introduce the conceptual features, starting with global features representing the notions discussed above. In this context, we use 'Image' instead of 'situation' as the conceptual entity expressed by a sentence, so that the global features in question may be said to classify images, at the same time as they classify gestalts.

In most cases, features assigned to the verb also apply to the image; the only feature reserved for the image is '**±telic**', as this notion is defined above. The other aspectual feature is '**±punctual**', again used in accordance with the above remarks, applying both to V and Image.

From the *transitional* dimension we posit the following global features, defined in terms of their positive value:

(14) **±transitional**: a monotonic change takes place in the image (not necessarily the only change in the image)
±completed: a transition has been completed (relevant only given '+transitional')

The following global Image-features reflect the *role* notions introduced above, again defined in terms of their positive value; these features also apply to verbs, as they are essentially properties of relations:

(15) **±polarized**: the image is constituted by an asymmetric binary verb (applies both to 'global' and 'source' polarity)
±force: the image is constituted by a force
±sourcal: the force has a source (relevant only given '+force')
±targeted: the force has a target (relevant only given '+force'; applies both to targets of source polarity and global polarity, criteriality of SU distinguishing between those)
±control: the image is constituted by a relation of exerted control; such a relation is necesssarily polarized

Global features representing *criteriality*, finally, are as follows, belonging both to Image and V, here defined as Image features, and again in terms of their positive value; the notions 'part(icipant)1' and 'part(icipant)2' are explained below:

(16) **±criterial**: the image is observably criterial
±part1-criterial: the image is criterial by virtue of criteriality of participant 1
±part2-criterial: the image is criterial by virtue of criteriality of participant 2
±pivot-criterial: the image is criterial by virtue of criteriality of the pivot
±coloring: the image is criterial in terms of coloring
±part1-coloring: the image is criterial in terms of coloring of participant 1
±part2-coloring: the image is criterial in terms of coloring of participant 2
±pivot-coloring: the image is criterial in terms of coloring of the pivot
±existence: the image is criterial in terms of existence
:
±space-related: the image is criterial in terms of space-relatedness
:

Specification of criteriality for participant 1 and 2 applies for existence and space-relatedness as well. A feature like '+part1-coloring' entails '+coloring', which in turn entails '+criterial'. Subspecification of criteriality types is again represented by features; for instance, space-relatedness has as one of its subtypes location, which in turn has traversal, represented by '**±traversing**', as one subtype.

These features constitute the main features categorizing images as such, and most of them apply to the verb as well. We now look at the relationship between Image specification and local features, i.e., specification of the constituents of the topology, including the verb.

Related to the features in (15), we define the following participant features (again in terms of their positive value, when nothing is specified to the contrary):

(17)

±pole:	belongs to the two participants of a polarized relation
±dominant:	relevant only for participants marked '+pole', such that the positive value goes to the controller of a control relation, the source of a polarized force relation, the perceiver of a perception relation, etc
±source:	the participant specification corresponding to '+sourcal'
±target:	the participant specification corresponding to '+targeted'
±controller:	belongs to the dominant pole of a control relation
±controllee:	belongs to the non-dominant pole of a control relation

A *vehicle* of a force is specified '-pole, -source, -target'.

Related to (16) are the following criteriality features characterizing participants (defined in terms of their positive value):

(18)

±part1-criterial:	criterial qua being participant 1 of the relation
±part2-criterial:	criterial qua being participant 2 of the relation
±part1-coloring:	coloring-criterial qua participant 1 of the relation
±part2-coloring:	coloring-criterial qua participant 2 of the relation
:	
±pivot-criterial:	criterial qua being pivot of the relation
±pivot-coloring:	coloring-criterial qua pivot of a transition
±crit-spell-out:	serves as criterial spell-out of the relation; will belong to the topological 'Pred' or adverbial of manner (not formally distinguished so far)
±path:	relevant only given '+crit-spell-out', and entails '+traversing' as specification of one of the participants

The following features relate to (14) (defined in terms of their positive value):

(19)	**±pivot**:	relevant given '+transitional', marks the *monotonic participant* of a transition
	±result:	marks the Pred of a branching transition construction (distinguishing it from other conceivable functions played by Pred in non-transitional constructions)

All of the participant features now given relate implicatively to verb-features. A participant feature entailed by '+telic' is the positive value of 'specified amount', '**±SPA**', to be carried by both direct arguments.

Consider now the question of *co-specification*, i.e., how the system is to ensure that the right specifications co-occur in a given matrix of features. This issue has two parts: one concerns the co-occurrence of conceptual features (those in (17), (18) and (19), plus '±SPA') in the specification of a given participant, the other the co-occurrence of conceptual features with the topological features in (13) - a correlation we refer to in (7) in part 1 as mapping principles between the conceptual dimension and syntax. In the present system, conceptual and topological features co-occur in the same matrix, whenever a participant is syntactically realized, hence the syntax-semantics mapping is here a matter of feature co-occurrence in one and the same constituent. We first address the co-specification between conceptual features.

Certain specifications are bound to co-occur, or not co-occur, whenever they both obtain. An example of the former case is the co-occurrence between '+source' and '+controller', an example of the latter is the co-occurrence between '+target' and '+controller'. Principles interrelating Image specification with participant specification will 'orchestrate' this distribution, through rules of the form "if F is an Image feature and G occurs in Participant x, then H occurs in x as well", and "if F is an Image feature and G occurs in Participant x, then H can*not* occur in x as well", exemplified by (20a) and (20b):

(20) a. If Image contains '+control', and '+source' occurs in Participant *x*, then '+controller' occurs in Participant *x* as well.

b. If Image contains '+control', and '+source' occurs in Participant *x*, then '+controllee' must occur in Participant *y distinct from x*.

Once substantively incompatible features are kept separate, through rules like (20b), co-occurrence of features is successively induced through rules like (20a).

The labels 'Part1' and 'Part2' used in the criteriality features in (16) and (18) relate by convention to rules like (20), *for instance* such that 'Part1'

refers to that participant in an Image which receives '+source' or '+dominant' (a disjunction containing only compatible specifications), and 'Part2' refers to that participant which receives '+target' or '+pole, -dominant'; rules imposing these conventions are like (20) in form.

Rules for mapping the conceptual specification onto topology are of the same form as (20), e.g. (21a,b), restating (7a,b) from section 1; we here replace 'Image' by 'Gestalt', as this is the appropriate name for the construct comprising both conceptual and topological features, and we replace 'participant' by 'argument':

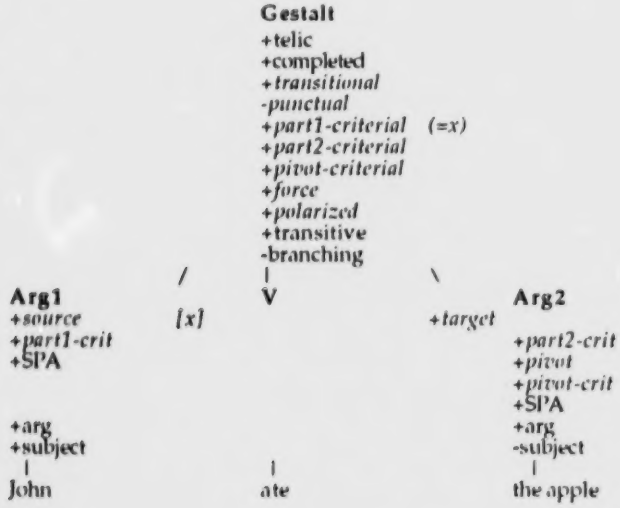
(21) a. If Gestalt has '+polarized', and '+dominant' occurs in argument matrix *A* then '+subject' occurs in *A* as well.
b. If '+source' occurs in argument matrix *A*, then '+subject' occurs in *A* as well.
c. If Gestalt has '+transitive', and '+target' occurs in argument matrix *A*, then '-subject,+argument' occurs in *A* as well.

Notice that there is no Gestalt level feature on which '+subject' is dependent, given a language like English or Norwegian, since any gestalt in these languages has to contain this type of argument.

The situation of an *implicit argument* is represented as an argument matrix containing only conceptual features, together with '-visible'. The situation of an *expletive* argument (like "there" in "there is a book here") is represented as a matrix containing only topological features.

To illustrate this formalism, we give the (necessarily incomplete) gestalt tree for the sentence "John ate the apple". The italicized features under the Gestalt node are to be seen as projected from the verb-inherent specification [x], and the italicized Arg-features are those that are induced by these same verb-inherent features (in neither case is the italicization part of the formalism itself).

(22)



The criteriality can here be further specified as *coloring* for Arg1 and Arg2, and *existence* for the pivot. We note that Arg2 is specified both as a pivot, i.e., as undergoing a monotonic change, and as a target, which means that in some other respect, the participant is directly affected. This complex involvement of the participant is reflected in the V and Gestalt specification, in the co-occurrence of '+transitional' representing monotonicity, and '+force, +polarized' reflecting non-monotonicity.

4. Minimal signs and their extensions

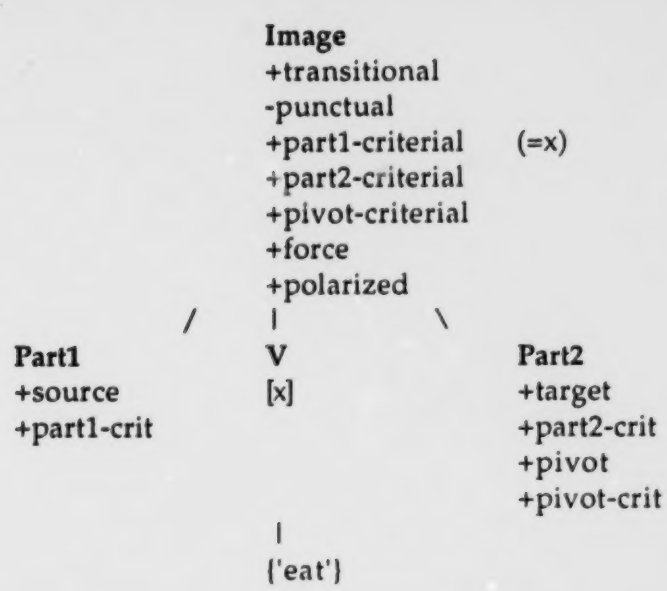
We are now in a position to illustrate the notion of a *minimal sign*, and extensions into gestalt schemata. Continuing with "eat", (23) is the essential part of the minimal sign for "eat" (the symbol '{'eat'}' is here a place-holder for the phonological specification; it is a highly non-trivial issue exactly what this specification should be, but this is not considered here):

(23)

V
+transitional
-punctual
+part1-criterial
+part2-criterial
+pivot-criterial
+force
+polarized
|
{'eat'}

The feature characterization in (23) renders all semantic aspects of grammatical relevance of the item; thus, '+polarized' and '+force' together imply that there are two participants involved in any act of eating, one a source and the other a target; by conventions like those given in (20) and (21), the source is understood to be 'participant 1', such that whatever criteriality features are understood to be associated with the source are represented in the characterization of V with the prefix '+part1-...', and correspondingly for the target and 'part2'. The specification '+transitional' marks that one of the participants, in at least one respect, behaves like a monotonic participant or pivot, by '+pivot-criterial' represented as criterial with regard to the change (by disappearance), and by general convention (not stated so far), when one of two force-related participants is monotonic and the act is identified (i.e., source-criterial), then it is the target participant which is the monotonic one. Given these entailments, this means that the conceptual properties of "eat" are fully represented by (23); (24) is the *unfolded* counterpart of (23), produced by the implications mentioned, and thus has exactly the same information as (23):

(24)



The node labels 'Image' and 'Part1/2' reflect the circumstance that (24) is only a conceptual specification, not a gestalt, and for this reason we will say that (23) and (24) represent the *conceptual core* of "eat", non-unfolded and unfolded, respectively.

Not all minimal signs are conceptual cores. For instance, there are verbs, such as "make" in the use exemplified in "John made me laugh", for which the minimal specification will necessarily involve syntactic features representing transitivity and a small clause predicative; for the present, however, we confine ourselves to the cases where the minimal sign is a conceptual core.

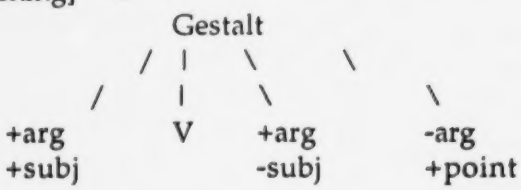
For a structure like (23) to attain the richness of a saturated gestalt like (22), it has, apart from the constituent spell-out and saturation, to undergo expansion with regard to the global syntactic features '±transitive' and '±branching', and the local feature '±SPA'. General feature-entailments will then decide values for '±completed' and '±telic' for the dominating node (which is then 'Gestalt') - according to (10) above, if the target of "eat" is realized as a DO, which follows from the specification '+transitive', then the gestalt is '+completed', and if in addition all direct arguments are '+SPA', the gestalt will be '+telic', thus yielding the structure of (22), apart from the saturation. Some of these entailments in their feature form are given in (25a), and some spell-out principles in (25b), mainly to illustrate the format. In the rules in (a), brackets are labelled only if the rule interrelates specifications in different constituents.

(25) a. i. $[+telic]_{Gestalt}$ -> ($[+arg]_{Arg_n}$ -> $[+SPA]_{Arg_n}$)

ii. [+polarized, +completed] -> [+transitive]

b. i. [+transitive, -branching] =>

ii. [+transitive, +branching] =>



In the branching rules, it might be investigated to what extent features like '+transitive' and '+branching' could be construed as making separate contributions, with some kind of unification between the subtrees they unfold separately. This question can only be assessed in the context of a fuller treatment of syntax, but since we expect to exploit the possibility of unfolding sets of features jointly to account for synthetic forms, this possible type of compositionality will not be all essential to our approach.s

Having thus illustrated the formal apparatus and some of the general rules, we turn to a more substantive aspect of the expansion of (23), which will lead to a number of principles constraining expansion.

In expanding the minimal sign (23), we notice that not all combinations of '±transitive' and '±branching' are possible:

(26)	a. '+transitive, -branching': OK	("John ate the apple")
	b. '+transitive, +branching': OK	("John ate the apple up", "John ate himself sick")
	c. '-transitive, -branching': OK	("John ate", "John ate of the apple")
	d. '-transitive, +branching': bad	(*"John ate sick")

General feature-entailment rules dictate these possibilities, being dependent on exactly the properties pertaining to criteriality and roles which have been outlined earlier, and which are encoded in the feature specifications of the minimal signs. We now demonstrate some of these rules, along with the expansions that they license. In this section we address the patterns in (26c), and in the next section, the patterns involving '+branching'.

What the patterns in (26c) ("John ate", "John ate of the apple") have in common is that they do not to realize the target participant as a direct object: in "John ate" the target is implicitated, in "John ate of the apple" it is realized as a prepositional phrase (PP). We noted above (cf. (10c)) that the latter option is available only for source-criterial acts, excluding constructions like "John broke of the window". We now show that

criteriality is crucial also to the possibility of implicitation, through showing the validity of the following licensing principles for implicitation:

(27) Principle of Implicit Argument Retrieval I:
Only criterial items can be implicit.
that is:
Given an image with the verb V, a participant of V can be implicit (i.e., not syntactically realized) only if it is criterial to V.

(28) Principle of Maximality of Implicitation:
At least one criterial item must be expressed.
that is:
Given a criterial image with the verb V, at least one of the criterial participants of V must be syntactically realized.

Simple illustrations of these principles are given by the following examples; we recall that "break" is criterial with respect to the object only, while "eat" is criterial with regard to both arguments:

(29) a. John broke the vase
b. * John broke
c. the vase broke
d. John ate the apple
e. John ate

The first fact to be noted is the illformedness of (29b) (ignoring the option of interpreting John as something breakable) vs. the wellformedness of (29c) and (29e). (29b) is a violation of (28), since no criterial item is expressed, whereas both (29c) and (29e) fulfill (28), "the vase" and "John" being criterial items with regard to the verbs in question. The second fact to be noted is that in (29e), there is an understood second participant - an item eaten -, whereas in (29c), no cause-like item is understood. This difference is in accordance with (27), since (29e) fulfills the condition for being construed as an implicitated version of the pattern in (29d), the item eaten being criterial, whereas from the pattern in (29a), there is no way of deriving an implicitation with regard to the subject, since this item is not criterial with regard to "break".

A further fact relating to the above is that from the pattern headed by "eat" in (29d), there is no derivative like (30), analogous in form to (29c):

(30) *the apple ate

(30) is out, both on a reading where no agent (source) is understood at all, and on a reading with an implicit agent. Neither construal is excluded by (27) and (28). The impossibility of the first construal points to a further constraint related to criteriality, namely that *criterial participants cannot be*

dropped from the frame of a verb - they can only be implicitated. That is, more precisely formulated (with 'agentive' standing for the combination of source and controller):

(31) Principle of Lexical Frame Alternation:
A verb can alternate between a frame with an agentive participant and a frame without an agentive participant only if that agentive participant is not criterial.

From (31), it follows that there can be no alternations like that between transitive and intransitive "break" for manner-verbs. The restriction of (31) to hold only for agentive participants is motivated by the apparent possibility for a verb like "kick" to alternate conceptually between a use *with* a target (as in 'kick something'), and without a target. Since the target of "kick" should count as criterial, in virtue of the direct contact between the agent and the target, this limitation of (31) seems necessary; however, it is not clear why there should be such an asymmetry.

The circumstance that (30) does not allow for a reading with an implicitated agent is in turn due to a restriction to the effect that implicitation must somehow be *retrievable*. Such retrievability does obtain in constructions like (32),

(32) a. the apple was eaten
b. such apples eat easily

and also in (29e) ("John ate"). In (29e), the implicitated role is one which is canonically linked to object position, and apparently the circumstance that this position is empty serves for the retrieval of the participant. The canonical linkage is crucial in this respect - in (30) the object position is empty as well, but this does not license an agentive role, canonically linked to subject position. We thus have (33) as a further regularity concerning implicitation, along with (34) which may serve as a preliminary statement concerning (32):

(33) Principle of Implicit Argument Retrieval II:
An empty position can serve for the retrieval of an implicit argument only if the role of that participant is canonically tied to the position.

(34) Principle of Implicit Argument Retrieval III:
An implicit argument which is not retrievable through an empty position must be morphologically 'flagged' or semantically supported by another item as well.

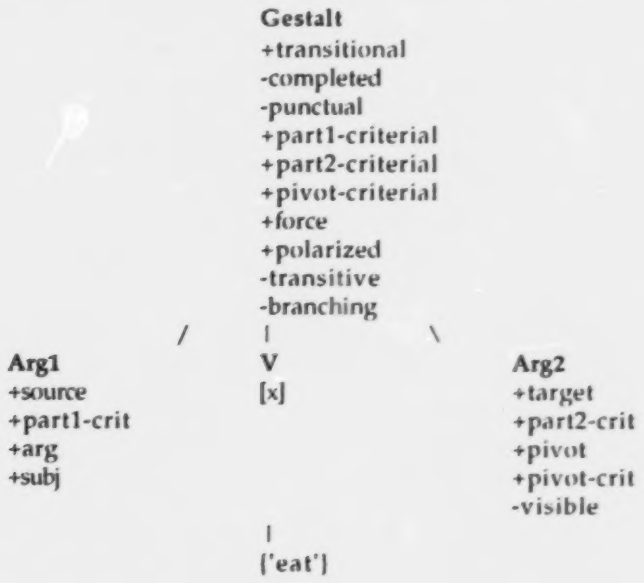
Here, the passive morphology of (32a) constitutes a licensing flagging, and the adverbial in (32b), through the understood relation 'easy for x', provides

the extra semantic support. In (30), both flagging and semantic support are missing.

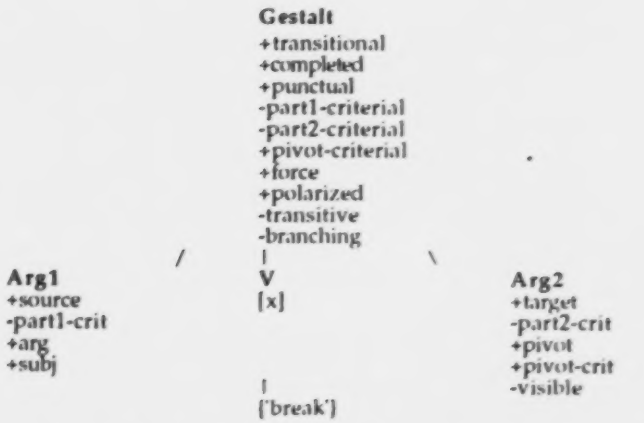
It should be noted that in passives, the implicit argument need not be criterial at all, as in Norwegian "glasset ble knust" ('the glass was broken'); hence, when morphological flagging obtains, it may seem as if this means of retrieval is strong enough to render criteriality superfluous. The same may hold for the type of semantic support found in middles, in so far as sentences like "such glasses break easily" can have the 'middle' type reading, i.e., with an understood agent.

The formal upshot of this discussion is that by the principles now stated, the gestalt frame (35), which represents implicitation of the second participant, is licensed, reflecting the wellformedness of (29e), whereas (36), the representation of (29b) on the reading considered, violates principle (28), since here, the only visible argument is non-criterial:

(35)



(36)



We have thereby established the possibility of expanding the minimal sign (23) in such a way as to accommodate the implicitation construction type in

(26c), "John ate". The possibility of the other type, "John ate of the apple", as opposed to "*John broke of the apple", follows from (10c), so we conclude that the gestalt frames underlying the options in (26c) are licensed as expansions from (23), through principles which are formally within the scope of the format of feature entailments (although we will not formulate these rules here). We now proceed with the types in (26b,d).

5. Expansions into branching constructions

5.1. Engendering and exchange constructions

The crucial part of the branching construction is the predicative (Pred). If the construction expresses a completed transition, the predicative generally expresses the *result* stage. In serving this function, the Pred either constitutes a *criterial spell-out*, as illustrated in a subset of the examples in (4), repeated as (4'),

(4')	Coloring:	John cut the grass *short*
		John broke the glass *to pieces*
	Existence:	The flower faded *away*
		He ate the banana all *up*
	Space relatedness:	
	Location:	He went *away*
		John fell *into the pit*

or it is what we call an *engendered result*. We first explain the latter notion, resuming our discussion of transition from section 2, now addressing constructionally expressed transition.

In transitions expressed by constructional means, a resulting image is explicitly stated, and along with it, an indication of an act which engenders this image. For instance, in a construction like "John kicked the ball flat", the part 'the ball flat' expresses the result, and we call this the *result* part of the construction; the part 'John kicked the ball' expresses the *engendering act*, and we call this part the *antecedent* image of the construction. The constructional transitions may thus be called *engendering* complex images, given the causal relation expressed between the antecedent and the result.

The transition expressed in these constructions clearly does not consist of the sequence antecedent image - result image, since these are not related as images in a monotonic transition sequence; rather, the understood transition is one turning a non-expressed state into the resulting state. For instance, in "John kicked the ball flat", the initial state of the transition is one where the ball is in its normal inflated state. Often, these transitions will be interpreted as punctual, as in the present example, but there are also cases where the antecedent may be seen as representing a sequence of images, each member of which can be related to a member of a sequence constituting a monotonic change leading up to the result. Such an example is "John sang the room empty", which *can* be interpreted such that the consecutive moments of John's singing are correlated with a sequence

of stages where the room has less and less people in it. Whether the transition is to be understood as punctual thus depends on whether the antecedent has to be interpreted as punctual.

The label 'engendering image' may also naturally be applied to those verb inherent transitions where the non-monotonic participant is *non-criterial* to the act, that is, non-source polarized images constituted by verbs like "remove" and "break" (as opposed to "eat"). In these cases, the engendering participant does not have an identified relation to what happens, for which reason it may be seen as operating from 'outside' of the transition itself, just like in the constructional cases. We will use the notion *engendering simple image* in these cases, as opposed to engendering *complex* image in the above cases.

Constructions with criterial spell-outs as predicatives, like in "John broke the glass to pieces", superficially look like complex engendering constructions, since they have both the branching structure and a result predicative. However, we reserve the term 'complex engendering construction' for those cases where the predicative result is the *primary result* expressed; in criterial spell-out constructions, the result part - e.g., "the glass to pieces" - is at most what we might consider to call a secondary result, the primary, or 'real' one being the one expressed by the verb. So, since "break" only heads a simple engendering construction and "the glass to pieces" is only a secondary result, "John broke the glass to pieces" does not constitute a complex engendering construction. (We will still refer to its content as 'constructionally expressed transition'.)

A notion subclassifying engendering images is that of *exchange*. An *exchange image* is an engendering image with an antecedent act which is *identified*, and thus has criteriality in itself, like in "John kicked the ball flat" and "John sang the room empty", as opposed, e.g., to "John made Bill angry", where the antecedent act is not identified, only postulated. In exchange images, we may say that one identified act is *exchanged* into another state of affairs. Engendering verb-inherent images ("break" etc.) are never exchange images, whereas constructional images can be of either type, as the examples just given show.

The coverage of some of the notions now introduced (ignoring criterial spell-out constructions) is summarized in the following figure, with the monotonic participant italicized (to read the figure, subsume under each notion the *structures* listed *immediately* underneath it within the vertical dividing line, and all the *examples* in the *bottom* area in the corresponding vertically defined area; thus for instance, under 'verb-inherent transition' belong the structures 'NP V *NP/PP*' and '*NP* V', and the examples 'I broke *the glass*', '*the glass* broke', 'I ate *the apple*', '*the apple* turned red'):

(37)

constructional transition	verb-inherent transition
NP V *NP* Pred	NP V *NP/PP*
NP V Pred	*NP* V

engendering image	non-engendering
$NP_{non\text{-}crit}$ V *NP*	*NP* V
	NP_{crit} V *NP*
	NP $V_{non\text{-}crit}$ Pred

exchange image	non-exchange
NP_{crit} V *NP* Pred	$NP_{non\text{-}crit}$ V *NP* Pred
NP V_{crit} Pred	

I kicked *the ball* flat	I made *John* sick	I broke *the glass*	*the glass* broke
I sang *the room* empty			I ate *the apple*
the match rained away			*the apple* turned red

The monotonic participant, or for short, *pivot*, of constructionally expressed transitions is always syntactically expressed, whereas participants of the antecedent image have possibilities of implicitation along the lines defined earlier. How these possibilities are exploited provides one dimension of variation among these constructions. Other dimensions are on the conceptual level, the most important one being how saliently the pivot is involved in the antecedent image. In "John kicked the ball flat", the pivot - the ball - is naturally understood as being the affected participant of the 'kick' relation, whereas in "John sang the room empty", the pivot - the room - has only the more marginal role in the antecedent image of being the location of the singing. Still more marginal is this role in a case like "John ate the refrigerator empty" - here the refrigerator takes part in the antecedent image only as the container from which the food understood as being eaten (an implicitated participant of the antecedent image) has been taken, and not as the target of eating. In accordance with the way in which the notion 'participant' is being used here, we will say that in the latter two cases, the pivot is not a participant of the antecedent image, whereas in "John kicked the ball flat" it is; a conceptual dimension of variation is thus whether the pivot is *shared* (between antecedent and result) or not.

Further dimensions of variation include the number of participants in the antecedent, their criteriality and their roles. Illustrating the grammatical significance of these and the above-mentioned factors, we now look further at the licensing conditions for constructionally expressed transitions. First, we demonstrate that the principles (10), partly repeated, also apply to constructional transitions.

(10) a. In the absence of a source, a controller or a vehicle, a monotonic participant is realized as subject.
b. In a completed transition of coloring or existence, if the monotonic participant is not realized as subject, it has to be realized as direct object.

Consider the near minimal pair (38), where "run", as has been noted, has both a coloring and a space-related dimension, the latter representing transition with regard to location:

(38) a. John ran *out of the wood*
b. John ran himself *out of the team*

In (a), the italicized part is a criterial spell-out of "run", expressing a stage that John reaches in his capacity as a monotonic participant of "run". "John" is thus realized as subject in accordance with (10a). In (38b), in contrast, the resulting location of John emerges as an *exchange* of his act of running - for instance, he ran so badly that he was excluded from the team. With regard to the antecedent image of such a construction, it is the coloring aspect of "run" which prevails, giving "John" the role as 'source'. With regard to the exchange part, however, i.e., the circumstance that John enters into the state of being out of the team, John is a monotonic participant. The individual John thus plays two parts in this complex event: as a pivot with regard to the change of state, and as a source with regard to the running. The mapping rules (10a,b) now distribute these two capacities each to its syntactic position: (10a) channels the source capacity to subject position and (10b) channels the pivot capacity to object position. Ultimately, thus, it is the exchange factor which causes the reflexive construction in (38b), as compared to the non-reflexive construction in (38a). We discuss the construction type in (38b) more generally in 5.3.

5.2. The realization of pivots in branching constructions

The following regularity holds, and must for the present be counted as a principle:

(39) A pivot for a result predicative, whether 'regular' or a criterial spell-out, has to be expressed, as subject or direct object.

In the first place, (39) rules out implicitation of pivots. For non-exchange engendering, this follows from the principle (28), which says that a criterial item must remain in the structure after implicitation: in an engendering structure of the form "John made me happy", no criterial item is left if the pivot is implicitated.[12] For exchange constructions, (39) rules

[12]We ignore here collocations of the type "Arbeit macht frei", which in their form show exactly the pattern we claim to be generally impossible - also in German.

out implicitation of constituents like "the room" in "John sang the room empty", and "the ball" in "John kicked the ball flat". In these cases, (28) would be satisfied, "John" in both cases being criterial. (27), the requirement that a participant of a verb V can be implicitated only if it is criterial to V, is irrelevant as a condition in this case, since these pivots are not participants of the verb. Moreover, as far as (27) goes, it is also not clear why an implicitated pivot cannot count as retrievable by the predicative, since pivots generally are criterial with regard to the predicative. Hence there is room for a stipulative principle like (39), pending possible explanations.[13]

(39) also excludes the realization of pivots in engendering constructions as governed by a preposition.[14] Such an exclusion is in effect already stated in (10c), repeated,

(10c) A monotonic participant is realizable as a prepositional object only if it is a co-participant with a color- or existence-criterial non-monotonic participant - i.e., if it is the target pole of a source polarity relation.

in that in no engendering construction will the pivot (if a non-subject) be a co-participant of a criterial subject: if it is a co-participant with the subject, as in the global polarity construal of "break", then this subject is not criterial, and if the subject is criterial, as in the exchange type of construction "John sang the room empty", then the pivot is not a co-participant with the subject, neither on a source polarity nor on a global polarity construal. In this respect, then, (39) is a repetition of rules already given. Even so, (39) in the form given serves as a convenient statement of regularities, and will serve for reference in what follows.

5.3. The patterns of exchange constructions

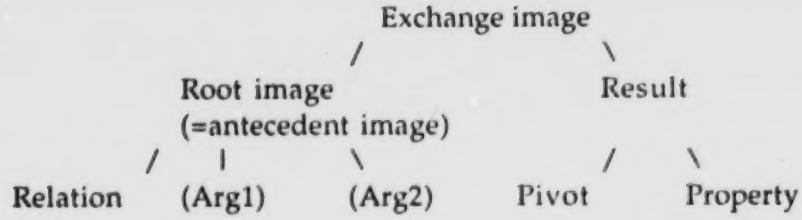
A schematic display of the conceptual pattern of the exchange construction is as follows, with 'Arg1' and 'Arg2' (represented as optional) standing for participants of the antecedent image, also called the 'root image' insofar as it is expressed by the root predication:

---

[13]Some proposals of relevance involve the notion of *predication* (cf. Hellan 1988, Heycock 1992), others *government* (cf. Johnsen 91) For instance, either approach may appeal to the occurrence of 'expletive pivot NPs', like the italicized item in Norwegian "De spylte *det* rent i gatene" ('they flushed *it* clean in the streets' (Hellan 1988)

[14]It should be noted, though, that in cases like "we made it too hot in the room"(cf. the previous footnote), the semantic pivot is the locative. In such cases, it seems necessary to have participants in the antecedent, even though grammaticalized constructions with a meaning like 'it was so hot that it got dry' could be imagined.

(40)



The main types of constructions falling within this group are listed in (41):

(41)

a. transitive exchange construction:

(i) targeted root relation with explicit Arg2, where Arg2 is identical to pivot;
ex.: "John kicked the ball out";

(ii) non-targeted root relation;
ex.: "John sang the room empty";

(iii) targeted root relation with implicit Arg2;
ex.: "John ate the refrigerator empty";

b. intransitive exchange construction:

(i) monadic root relation with specified Arg, where Arg is identical to pivot;
ex.: "the water boiled away";

(ii) zero-valenced root relation;
ex.: "the match rained away";

(iii) monadic root relation with implicit Arg;
ex.: "the kettle boiled dry".

There are four possibilities for the pivot's selection of topological point:[15]

(42)

a. The pivot shares the object position with the target of the root.
b. The pivot has the object position to itself.
c. The pivot shares the subject position with the Arg1 of the root.
d. The pivot has the subject position to itself.

We address these possibilities in turn. Possibility a. is exemplified by "John kicked the ball out", the situation described in (41.a.i). One condition on this construction is that the subject be a *controlling source*; thus, (43), where the subject is only a vehicle, is impossible:

[15]We here ignore the issue of whether, in the cases in (41b), the pivot should have an underlying object position, in accordance with the Unaccusative Hypothesis as applied to these constructions - cf., e.g., Hoekstra and Mulder 1990, and Levin and Rappaport 1992. Following Seibert 1993, we assume this hypothesis to be false, but the essence of the present remarks is independent of this position.

(43) *the ball rolled the card house down

This condition is met in (38b) ("John ran himself out of the team") above, and the examples in (44) illustrate that the condition applies to constructions with reflexive objects just as much as it does to constructions with non-reflexive object:

(44) a. the ball rolled down
b. * the ball rolled itself down
c. the ball bounced into the garage
d. * the ball bounced itself into the garage

One may speculate that the reason why there should be such a condition, has to do with the prototypical polarity of the transitive constructions, assuming cases like "John ate the apple" and "John broke the glass" to be prototypical (even though differing as to whether the polarity is source based or global). Essential to the exchange construction is that it is not 'secured' in lexical transitivity, hence, to 'secure' its transitive status, the construction has to show all properties of the prototypical transitive construction, which includes a controlling source as subject. Once a construction has *lexical* transitivity, in contrast, it may fail to express a force at all, and when it does, it may put a vehicle in subject position, as exemplified by "the stone hit the wall" and "the ashes covered the field", that is, subject to principle (31); thus, once it is lexically secured, transitivity has a lot of flexibility which is missing in the non-secured cases. We may express this speculation in the principle (45) (which is not to be taken as a universal principle:

(45) If a transitive relation is not lexically defined, the subject must display the optimal properties of a polarized force construction, i.e., be a controlling source.

Another condition on this exchange construction is illustrated by the oddness of the examples in (46):

(46) a. * John painted the house expensive
b. * John built the house expensive

Nothing is wrong with the causal relations intended here; what has been violated seems to be a principle like (47), our closest counterpart to the Theta-criterion:

(47) A syntactic position can represent only one pivot function, i.e., only one dimension of change.

In (46), the position of "the house" is read (in the intended sense) both as the pivot of "paint"/"build" and as the pivot of the change into expensiveness, and such a situation is ruled out by (47). Note that (47) is not a prohibition against multiple 'roles' or functions played by an NP in general; for instance, the object of "eat" is both affected and a pivot, but a pivot only in one transition, and thus in accordance with (47).

A construction type *not* excluded by (47) is illustrated in (48):

(48) a. John painted the house *red*
b. John ate *up* the bread

Here the italicized expressions are *criterial spell-outs*, which means that they do not induce any extra dimension of transition, in addition to the one induced by the verb.

From (45) and (47) we deduce the following:

(49) a. It is impossible for both subject and direct object of the same branching construction to express pivots.
b. It is impossible for one branching construction to express two transitions with syntactically realized pivots.

(45) directly entails (49a), and (49b) is entailed by (47) and (49a) in conjunction. As will be seen shortly, if transitions with *implicit* pivots are taken into account, there can be more than one transition expressed in a single branching constructon. (49) hold true also of non-branching transitive constructions, but for these cases, these regularities do not follow directly from (45) and (47); conceivably, it might be possible to generalize (45) in such a way that they could then follow, but we do not make any proposal to that effect here.

We now turn to possibility (b) in (42), the possibility that the pivot has the object position to itself. This can happen only if the root relation doesn't claim the object position, a situation which obtains in either of the two cases (41a.ii-iii), namely that either the root predicate is *monadic*, as exemplified in (50a), or the root predicate is targeting, but the pivot and the root target are not understood to be identical, so that no sharing of the object position is possible. The target is then *implicitated*, as in (50b), where the understood food is left implicit; here there are then expressed two transitions, but "the refrigerator" is a pivot only with regard to one of them, hence this construction is accepted by (47).

(50) a. John sang the room empty
b. John ate the refrigerator empty

In both cases, (45) is obeyed as a necessary condition as well, (51) illustrating a violation of it with a monadic root predicate:

(51) * the water boiled the kettle empty

Moreover, the whole set of conditions on implicitation, repeated in abbreviated form from above, has to be satisfied in constructions like (50b):

(27') Only criterial items can be implicit.

(28') At least one criterial item must be expressed.

(33') An empty position can serve for the retrieval of an implicit argument only if the role of that participant is canonically tied to the position.

(34') An implicit argument which is not retrievable through an empty position must be morphologically 'flagged' or semantically supported by another item as well.

(27) and (28) are straightforwardly satisfied in (50b), given the target criteriality of the thing eaten and the criteriality of the remaining item "John". However, if (34) is to be seen as an additional necessary condition, then it fails to be obeyed by (50b). The operation of these conditions on branching constructions can otherwise be appreciated noting that (28) also rules out constructions like "*the refrigerator ate empty" and "*the room sang empty", where "eat" and "sing" have been stripped of all their criterial arguments. "*The apple ate up", in contrast, passes both (27) and (28) (as well as (45)), but is ruled out by (33) and (34). (Superficially at least, it may then seem that (34) is required more for implicitation from subject position than from object position; a full assessment of this question cannot be made here.)

A construction which fits into neither of the branching patterns now considered is one where an antecedent act with a non-criterial source gets 'exchanged' into some other state, as, e.g., in (52)

(52) * John broke the radio dead

On the alleged reading where the target of "break" is the radio, the construction is ruled out by (47), on a par with (26). On the alternative alleged reading, where the target of "break" is implicitated, the construction is ruled out by the principle (4), since "John" is not a criterial element.

We now turn to the *in*transitive constructions in (42). Possibility (c) is that the pivot shares the subject position with the single participant of the root; this is option (41b.i), exemplified by "the water boiled away", where the water is both what boils (as a vehicle) and what undergoes a transition. Since vehicles are not pivots, this pattern represents no violation of (47).

The last case in (42) is where the pivot has the subject position to itself, which happens as described in (41b.ii-iii), namely when either the root

has no arguments at all, or it has an implicitated argument, as illustrated in (53a) and (53b), respectively:

(53) a. the match rained away (zero-valenced root relation)
b. the kettle boiled dry (implicitation of single participant)

Where implicitation takes place, we would expect the conditions (27), (28), (33) and (34) to be in operation again. In (53b), what has been implicitated is the vehicle of boiling; this participant (e.g., the water) is criterial to boiling, satisfying condition (27), but no criterial items now being left, the construction violates (28). Also, in conflict with (34), this implicit argument may seem to be in no way flagged. However, it may be that the *container* (the kettle) serves as an indication of what this argument is; we leave the question at that.[16]

5.4. The branching expansions of "eat"

Given the above discussion, we now sum up its consequences concerning the availability of expansion with '+branching' for "eat", which is as shown in (26b,d), repeated:

(26) b. '+transitive, +branching': OK ("John ate the apple up", "John ate himself sick")
d. '-transitive, +branching': bad (*"John ate sick")

First, the construction type illustrated by "John ate the apple up" is represented in the following gestalt frame, "up" being a criterial spell-out to "eat", and representing the appropriate dimension, "up" here signalling total annihilation, which is the pivot criterion to be fullfilled by the object:

[16]We might otherwise propose that (28) and (34) are not defined for vehicles, but only for participants functioning as dominant poles and targets, or what we might call the *cardinal roles*. This is to say that principles concerned with *retrieval* of roles are only focussed on those roles that constitute polarity.

(54)

Gestalt
+transitional
+completed
-punctual
+part1-criterial
+part2-criterial
+pivot-criterial
+force
+polarized
+transitive
+branching

Arg1	**V**	**Arg2**	**Pred**
+source	[x]	+target	+crit.spell
+part1-crit		+part2-crit	+result
+arg		+pivot	
+subj		+pivot-crit	
		+arg	
		-subj	

{'eat'}

Hence, (54) is another gestalt frame expandible from (24).

Secondly, "John ate himself sick" is construed according to the gestalt frame (55):

(55)

Gestalt
+completed
+transitional
+exchange
-punctual
+criterial
+part1-criterial
+part2-criterial
+pivot-criterial
+force
+polarized
+transitive
+branching

Arg1	**V**	**Arg2**	**Arg3**	**Pred**
+source	[x]	+target	+pivot	+result
+part1-crit		+part2-crit	+pivot-crit	+pivot-crit
+arg		+pivot	+arg	
+subject		+pivot-crit	-subject	
		-visible		

{'eat'}

This construction is again accepted. As for criteriality, it is valid since the implicit item is criterial, fulfilling (27), and there is a criterial argument remaining, fulfilling (28). As for the role dimension (cf. (45)), the Arg1 is a source. Hence, the gestalt frames for both the patterns in (26b) are accepted.

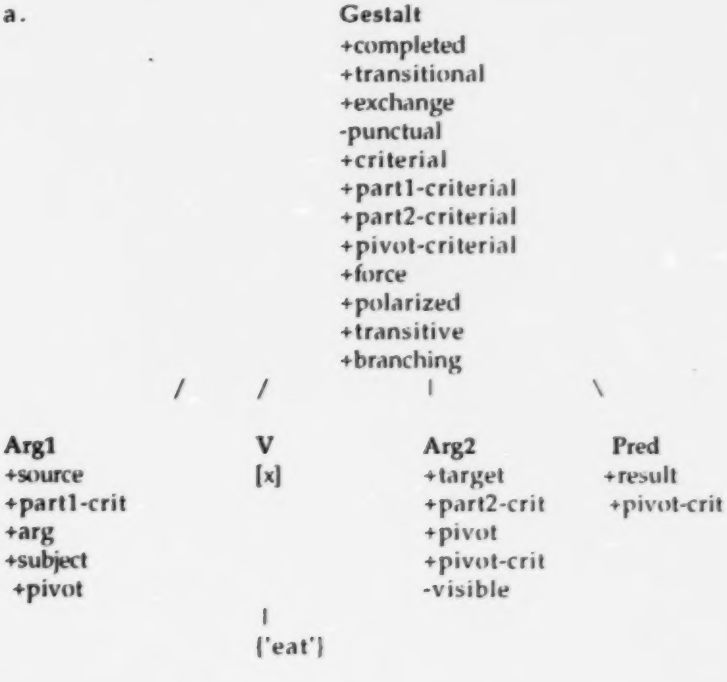
Remaining is the pattern of the unacceptable (26d) "John ate sick", with the reading that he gets sick as a result of the eating. There are two construals to be ruled out here. On one, "John" is a pivot, but at the same time, as a source of "eat", he is a differentiated participant. The rules (10a,b), repeated again, reserve the subject position for this differentiated function, the source, and demand that the monotonic function be expressed as an object:

(10) a. In the absence of a source, a controller or a vehicle, a monotonic participant is realized as subject.

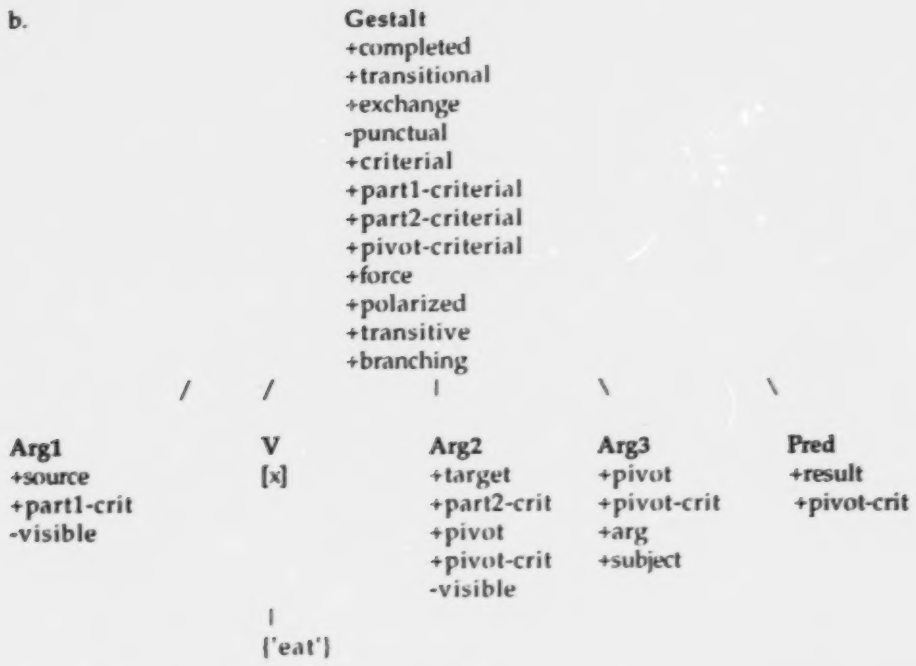
b. In a completed transition of coloring or existence, if the monotonic participant is not realized as subject, it has to be realized as direct object.

This rules out the gestalt frame (56a), since here the two functions coexist in Arg1 (cf. the discussion in conection with (38)). The other construal of this construction, (56b), where the offending source function of "John" is omitted, is also excluded, this time since both of the criterial arguments of "eat" are now implicit, contrary to (28):

(56) a.



b.



Through a discussion of constraints on implicitation and branching resultative constructions, we have thus arrived at certain general principles governing these phenomena, and illustrated, for the selected lexical item "eat", how these principles suffice to predict the possible gestalt (or clause) frames in which this item may occur, given the minimal semantic characterization of it as starting point, illustrated in (23). This illustrates our idea of how lexical specification is essentially semantic, and our view of how the interaction between Lexicon and Grammar is implemented through expansion processes with regard to global features. We summarize these views further in section 7; however, first we look briefly at the phenomenon of 'reanalysis'.

6. Derivation

In saturation, the phonological aspect p of a sign S gets surrounded by more and more other phonological material, representing signs which fit into the gestalt frame defining S. That is, this addition of new material does not affect the structure of the gestalt frame of the sign, in so far as the combination of roles and syntactic arguments is concerned. In the process of *reanalysis*, however, this is exactly what happens: the phonological aspect p of S finds itself in a new gestalt frame T, whose difference from S is not of the kind that follows from the general expansion possibilities from minimal signs just illustrated. Rather, the natural way to look at these alternations is as *rearrangements* in the gestalt frame of a given sign. In accordance with this view, we call the alternations *derivations*. Derivations split into two basic types - those accompanied by affixation to the form p of S, and those not so accompanied (in the latter type, it may or may not happen that introduction of forms outside the original word takes place;

this is not pertinent to these remarks). The former will be called *affixal derivation*, the latter *non-affixal derivation*. Affixal derivations manifest themselves in word forms, which may or may not be predictable, depending on the generality of the process.[17] If they are *not* predictable, they constitute that second part of the Lexicon which was mentioned under (G) in section 1, and the derivation may then be further specified as a *lexical derivation*. If the composite forms are predictable, we do not count them forms as part of the Lexicon, meaning that the Lexicon in the present sense does not necessarily contain everything definable as a 'word' (as opposed to 'phrase'). The operations on the gestalt frame of predictable affixal derivations may be quite like those of non-affixal derivations, which means that they should not be kept apart as types, except in their use of affixation or not - for instance, putting the affixal derivations at a stage prior to an alleged 'lexical insertion' and the the non-affixal derivations after, is at the outset unmotivated (In effect, both types are defined without any reference to ordinary saturation, from which it follows, as mentioned above, that we assume no level of 'lexical insertion' in Grammar whatsoever).

In the present context, one crucial point about derivations, of whatever type, is that they, as processes, do not (except incidentally in some cases) have a place in the dimension of expansion. That is to say, whatever the outcome of their operation on the gestalt frame is, this is not an outcome which necessarily manifests itself in the addition of global features to the gestalt.[18] Thus the derivational dimension must be recognized as one *not following the 'monotonic growth'* picture we have been drawing in the previous sections. Space prevents us from going into a full investigation of derivation types, in search for possible conformity to at least subpatterns of this 'growth'.[19] Nor will we, for same reasons, suggest any organization of the 'dynamic' dimension constituted by derivations.[20] However, we mention a few examples of affixal, non-predictable derivational processes, whose word-forms thus are specified in the Lexicon. These are only random instances of derivation, hence we leave a more systematic development of derivation for other occasions.

One type of case is prefixation with "be-" in German and Norwegian, here exemplified by the Norwegian (57):

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[17]Roughly speaking, the process counts as general if either the affix or the stem has a frame generally specified, and the introduction of, respectively, the stem or the affix in that frame will count as regular saturation of the frame. In the case of non-generality, then, it simply has to be listed which stems, resp. affixes, can occur in the slots of the frame.

[18]We here ignore the technically trivial possibility of simply stipulating a new global feature for each derivational process, signalling its application.

[19]For instance, proposals with regard to 'semantic persistence' of derivation, with the 'meaning preservation' of classical transformations as a special case, have been made in Hellan 1989 and Dimitrova-Vulchanova and Hellan 1991; cf. also Pitz, in preparation.

[20]At least it should be obvious that derivation is not a relation between the different aspects - syntax, conceptual structure, etc. - of the sign, simple or complex. Such a picture is in fact partly present in some earlier and current versions of generative grammar, to the extent that the relation, say, between surface syntax and logical form/semantics is constituted by transformation-like derivational rules.

(57) Jon beplantet haven med trær
'Jon be-planted the garden with trees'

"Be-", according to Pitz, this volume, may be generally characterized as meaning 'cover', taking as direct object any eligible participant from the repertoire of the hosting stem which allows for being interpreted as undergoing 'coverage' in some way or other. The repertoire of the hosting stem, here the verb "plante" ('plant'), comprises regular participants and potential criterial spell-outs. "Plante" takes as regular second participant the plant put into the earth, which is pivot criterial in having the requirement imposed by the verb that it ends up with this type of location; hence the potential criterial spell-out of "plante" is a specification of the place where the plant gets located. As this place can be an area, and thus subject to coverage, it is an eligible item for serving as direct object of "be-plante". The target participant of "plante" now gets syntactically relegated to a 'with-phrase', and the criterial spell-out of "plante" becomes direct object of the new verb. This rearrangement takes place without alteration, lest expansion, of the global gestalt features, which are '+transitive, +completed' for both frames. Thus, prefixation with "be-" illustrates the pattern of affixal derivation as we have described it; moreover, since the dependence on a 'cover-able' item on the part of "be-" is only a necessary, not a sufficient condition for affixation with "be-", meaning that "beplante" has to be provided on the list of such forms, this also illustrates a non-predictable derivation.

"Be-" exists only as an affix. The preposition "fra" can also be used in a way similar to "be-" in (57), for instance as in (58), illustrating so-called 'incorporation', where the new verb-form again is non-predictable:

(58) Vi fratok Jon pengene
'we from-took Jon the money' ('we took the money away from Jon')

Again the closest object of the new verb is an item which would occur only as a potential criterial spell-out of the stem (that is, when you take something, this thing can be normally understood to be taken *from* somewhere, thus constituting another instance of location criteriality), whereas what would be the direct object of the stem, viz. the target of "ta" ('take'), i.e., 'the money' in (58), is still a direct object. The rearrangement is thus different from the one in (57), but there still is a rearrangement, and again, the global features remain unaffected by this rearrangement.

Other cases of non-predictable affixation involve affixes corresponding to predicatives of branching constructions, like, e.g., "ver-", "zer-", "er-" and "ent-" in German, as shown in Pitz, op.cit. In both of the examples in (59), like in (57) and (58), the global features are the same in

'input' and the 'output', namely '+transitive, +completed'.[21] In most of these constructions, the affixal predicative represents a criterial spell-out of the stem, like in (59a), but perhaps not always, as shown by (59b), assuming that beating as an act does not have death as a criterial pivot property (from Pitz, op.cit.):

(59) a. er verjagte die Kuh (vom Rasen)
he away-chased the cow (from the plain)
b. er erschlug sie
'he dead-beat her'

Still, as a lead in establishing from where 'new' arguments in affixal derivation are taken, it seems that the criterial field of the stem verb is essential. In this respect, then, affixal derivation is similar to expansion in being highly sensitive to the semantic specification of the minimal sign; however, as we have shown, the 'growth' of global feature specification characteristic of expansion is missing in derivation.

Non-affixal derivation will involve most of what is commonly treated as 'syntactic derivation' in standard frameworks. A question we do not explore here is the formal construal of derivations, in particular what 'drives' these processes. In lexical affixal derivation, the 'driving' factors may be simply the complex words themselves, with the information going with the affix as such (like expressing 'coverage') and the stem, whereupon the rearrangement of the gestalt frame emerges as a way of reconciling the demands of the two, reestablishing, as it were, a 'balance' in the total frame. In non-lexical derivation, however, this model is less obvious, and space prevents us from addressing the issue here. Another question to be left open is the proportion of derivational processes as compared to expansion in the total 'load' of the grammatical system: although hardly formulable as an issue that can be measured, it seems these types of 'processes' are the two main ingredients of Grammar. Consequently, the remarks of the present section has had no further aim than just pointing out and to some extent delineating this other dimension as opposed to expansion. In turn, however, to study derivation properly, the expansion dimension has to be accurately delineated, so in this respect our main concern here constitutes a prerequisite for the study of derivation.

7. Minimal signs and Grammar

After this discussion of the derivational dimension, we return to the expansion dimension. Having illustrated the expansion of minimal signs into gestalt frames, let us elaborate a little on the general stipulations from section 1. As stated in (B) and (C) in section 1, we may view the *Grammar* as consisting of, on the one hand, all the features that may constitute or supplement the minimal signs, and, on the other, the entailment rules

[21] It could even be argued that the prefix here induces the feature '+branching', but we will not go into this issue.

regulating possible combinations of features. In this respect, the features of the minimal signs are fixed, in the sense that in the array of possible expansions (=enrichments) of a minimal sign, there is no expansion which involves changing features of the minimal sign itself. Thus, visualizing Grammar in part as the definition and expansion of minimal signs into gestalt frames as indicated in (60) (representing both types of objects exclusively in terms of global features), the feature specifications $\mathbf{F_1}$,...$\mathbf{F_i}$ (boldface here representing specified features) of the minimal sign recur unchanged in all the gestalt frames expanded from it:

(60) minimal sign:

$\mathbf{F_1}$
:
$\mathbf{F_i}$
|
a

gestalt frames: / / | \ \ \

$\mathbf{F_1}$	$\mathbf{F_1}$	$\mathbf{F_1}$	$\mathbf{F_1}$
:	:	:	:
$\mathbf{F_i}$	$\mathbf{F_i}$	$\mathbf{F_i}$	$\mathbf{F_i}$
$+F_j$	$+F_j$	$-F_j$	$-F_j$
$+F_{j+1}$	$-F_{j+1}$	$+F_{j+1}$	$-F_{j+1}$
:	:	:	: .....
$+F_n$	$-F_n$	$+F_n$	$-F_n$
:	:	:	:
|	|	|	|
a	a	a	a

What we here call 'expansion' (or 'enrichment', or 'projection') of a minimal sign into a set of gestalt frames is thus to be seen as the *definition* of a set of gestalt frames such that the number of specified features in them varies, but the specifications in the one with the minimal number of specifications is common to (or 'persistent' in) all of them. Such a set we will call a *gestalt frame family*, each frame family being in a sense 'projected' from one distinguished member of it, namely the minimal sign. In general, the members of a frame family may have varying amounts of specified/non-specified features. A *complete* gestalt frame is one where all features of relevance in the grammar are specified; in general, each family will have a large number of those.

Again, what we have now described are the types of objects that emerge through grammatical characterization; at this stage we need not comment on whether any type of such objects constitute a type interesting enough from some viewpoint or other to figure as a designated 'stage' in a 'production process'. The only sense in which we are so far postulating

'levels' of analysis is the trivial one of recognizing the various aspects of the sign (saturated or not), such as the conceptual aspect, the syntactic aspect, and so on.

Turning to what the Grammar as such is constituted by, we on the one hand recognize *features*, on the other hand *rules*. As for features, most of the conceptual features have been commented on above, whereas in a more elaborated syntax, the features '±transitive' and '±branching' are not the only ones at the global level: others are features reflecting tense, auxiliary verbs or markers, reflexive markers, clitic doubling and other cliticization phenomena, and verb serialization[22]; in addition come morphosyntactic features of various types. The rules divide into two types: entailments and branching rules. Branching rules are those that map certain features or feature-combinations onto constituent structures, be they conceptual or morpho-syntactic. For instance, the global feature '+transitive' entails the existence of two constituents, one marked '+arg, +subj', the other marked '+arg, -subj'. The more concrete syntax in this system thus becomes a pervasive *spell-out of feature combinations*, formally resembling a bit the mechanism suggested in Postal 1969, except that while his mechanism applies within nouns and noun phrases, the present spell-out mechanism takes the whole sentence as its domain, and will construe some syntactic phenomena as in certain ways a 'morphology' of phrasal level constructions (cf. also Anderson 1992). Generally, this approach is likely to give access to representing phenomena of 'synthetic' morphology, clitic clustering, clitic fusion, and others.

Viewed more from above, the dimension of Grammar here envisaged thus ultimately provides a taxonomy of constructions, characterized in terms of global conceptual and global syntactic properties. Through rules for combinations of features representing such properties, the Grammar characterizes exactly those combinations of form and content which constitute acceptable constructions of the language, and in so doing, it is 'generative' in the original sense, even if as now outlined, it lacks those 'dynamic' dimensions which have characterized some generative models. As pointed out in section 6, this expansional dimension of Grammar coexists with the derivational dimension, hence the 'specificational growth' picture now developed does not represent the total Grammar. However, it is only through abstracting out the expansional dimension and studying its properties that we can bring ourselves in a position to fully explore the derivational dimension in turn.

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[22]See Bodomo 1993 for a study of verb serialization compatible with the present ideas, in that the serial constructions appear to be analyzable as direct expansions from the minimal signs of the verbs involved, through some kind of 'merger' operation, but not derivation.

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DERIVED DELIMITERS

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Introduction.

In this paper, we discuss the effect of prefixation in German. We will show that prefixation has an effect with respect to delimitedness of a situation. In some cases, the prefixes act as the delimiter themselves together with the verb, while in others they select the spatial extent of the object as the delimiter of the situation. A general effect of prefixation is the demotion of previous delimiters.

In section 1 we present different types of delimiters; in section 2 we discuss correlational properties of one type of delimiter, namely the participant delimiting through spatial extent or some other property. Section 3 gives a presentation of prefixes in German and establishes their status as delimiters or their role in delimitedness. In 3.4. we treat a further case of prefixation, namely preposition incorporation. In section 4 we give a lexical representation of the prefixation process.

1. Delimitedness.

Telicity, that is temporal boundedness, is one of the salient properties according to which situations are categorized (Vendler 1967, Dowty 1979, Smith 1991). A telic event, i.e. accomplishment and achievement in the familiar classification, is characterized by having a natural final point beyond which the event cannot continue and which has to be reached for the event to be completed. An atelic event, i.e. activity, can stop at any point. According to these distinguishing properties telic constructions are identified by their incompatibility with durative expressions (such as *for hours*), with continuation phrases and by the lack of certain entailments. More concretely, since the event is described as having an endpoint, it cannot continue indefinitely as would be implied by a durative adverbial or a continuation phrase; since the endpoint must be reached, a 'slice' of this event, as represented by the imperfective, does not entail that the event actually has taken place. These tests will be illustrated in the discussion below.

This article is a revised version of a paper presented at the NordLEX meeting in København, 6/7.2.1993. The article is a result of my research on derivation. I would like to thank the Norwegian Research Council (NAVF) for supporting this project. I would also like to thank Mila Dimitrova-Vulchanova, Lars Hellan, Lars Johnsen, Anja Seibert and Ingebjørg Tonne for helpful discussions and comments.

1.1. Delimiters.

A telic interpretation of a situation can be achieved by different means. We will refer to these means as *delimiters*, in the sense of Tonne (1992). Essentially, delimiters constitute the endpoints of situations as encoded in linguistic expressions. This is to say that it is the linguistic expression of the event which represents it as delimited.[1] Situations are easily presented as delimited through the specification of an end-of-path of some motion, or through the change of state in a participant. What distinguishes *Mary walked in the park* from *Mary walked to school* is the expression of an endpoint in form of the end-of-path specification. A delimiter is thus the expression correspondig to the endpoint associated with a situation. Importantly, the presence of a delimiter leads to telicity only under the condition that the participant which either represents or has to reach the endpoint, be a specified amount (cf. Smith, op. cit., Krifka 1992).

We distinguish between five types of delimiters, namely the relation itself, the spatial extent or some other property of a participant, the limit of the spatial distance, i.e. the end-of-path, explicit result expressions such as resultative small clauses, and finally aspectual prefixes. We discuss each of the delimiters in turn.

1.1.1. The verb.

The termination of the event can be given inherently by the relation itself. Verbs like *kill , die, awake* specify a change of state which represents the endpoint of the event. Importantly, a verb like *eat* is not inherently delimited, a fact that can be seen in a construction like *he ate all day long*. Only (unbounded) activites and states allow durative adverbials.

However, some verbs characterized as inherent delimiters can be modified by durative adverbials:

(1) he hit the dog for hours
he killed rats for months

Importantly, both expressions have an iterative interpretation. In (1a) this iterativity results form the nature of the verb, which does not express a change of state; in (1b) the change of state is such that it cannot be repeated on the same object. The interpretation of the repetition of the activity results from the non-delimitedness of the object. (1b) illustrates a general condition on telic constructions: the participant undergoing the change of state must be delimited, it must be spatially delimited. In other words, the endpoint must be specific. In Smith' terms, these constellations are *derived activities*: the incompatibility between the verb constellation and the durative adverbial is resolved by reinterpreting the verb constellation as a series of repeated instantaneous events.

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[1] We are thus not concerned with endpoints of situations in the world.

1.1.2. Property of the object.

The delimiter is the spatial (or temporal) extent or some property of the target participant: it is the spatial extent of *the apple* in *eat the apple* , of *the movie* in *watch the movie*. The difference between *eat the apple* and *eat* is thus delimited vs. non-delimited. *The apple* and *the movie* give the spatial/temporal extent that has to be traversed for the event to be correctly described as *he has eaten the apple* or *he has watched the movie*. Once they are traversed, the same event cannot continue:

(2) *he has watched the movie and is still watching it
*he has eaten the apple and is still eating it

According to Tenny (op. cit.), verbs of consumption and of creation select this type of delimiter. *walk ten miles* and *cross the desert* are other situations which are delimited by the spatial extent of the objects. Again, it is a condition on these participants that they be finite if they are to act as delimiters.

Importantly, it is not only the spatial extent of the participant which may act as the delimiter; the verb may specify another property in the participant according to which the participant 'measures out and delimits the event': as noted in Tenny (op.cit.), a verb like *ripen* specifies *ripeness* as the relevant property in the participant that delimits the event, *bribe* selects *bribed-ness* as the delimiting property.

In 3.2, 3.3., we will see that predicatives and prefixes too can specify the property with respect to which the object acts as delimiter.

1.1.3. End-of-path.

While *run* refers to an activity, *run to school* has a natural endpoint: the goal or end-of path, and thus presents the properties typical of accomplishments:

(3) a. he ran for hours along the road
b. *he ran to school for two hours

(4) a. he was running
b. he was running to school but he didn't actually get there

(3a,b) show the contrast in compatibility with a durative context. (3b) behaves like an accomplishment in not allowing a durative adverbial; from (4a) we can entail that he has run while (4b) does not entail that he has actually arrived at school as can be seen from the compatibility of the two assertions. End-of-path is the delimiter for motion verbs and other activity verbs, while path itself does not act as delimiter, cf. (3a).

1.1.4. Resultative small-clause (SC).

With SCs, the endpoint is either represented by the whole SC, by the predicative which can either an adjective, a particle or a PP, or by a property of the object specified by the predicative. Consider the following resultative constructions (we use German examples since German is much more liberal in the formation of these constructions than English):

(5) a. er lief sich müde
he ran himself tired

b. er hat die Familie reich gesungen
he has the family rich sung

The situation *sich müde laufen* is resultative as opposed to *laufen* which is an activity that may be otherwise delimited by the specification of a goal. *Singen* is an activity too, *sich reich singen* , however, can be considered delimited in the following sense: to begin with, the singer is not rich, at one point he is rich, after which his activity cannot be described as *die Familie reich singen*. In (5a,b), it is the whole SC which acts as the delimiter.

(5) illustrates a crucial property of predicatives: they require a subject; this can be the object of a transitive relation, the subject of an ergative, a fake reflexive referring to this subject, or a newly introduced SC subject.

With respect to delimitedness, the predicative may have different effects: first, as seen in (5) it may (together with its subject), introduce an endpoint to an unbounded situation. Furthermore, it may change the endpoint of a situation, as in (6b):

(6) a. er schlug den Mann
he hit the man

b. er schlug den Mann tot
he hit the man dead

The result specified in (6b), *tot* 'dead', is not inherent in the relation *schlagen* 'hit' which if interpreted instantaneously can be considered an inherently delimited relation. In some cases, the small clause predicate is only an extension of the main relation:

(7) a. er aß die Suppe
he ate the soup

b. er aß die Suppe auf
he ate the soup up

(8) a. er malte die Türen
he painted the doors

b. er malte die Türen rot
he painted the doors red

(7a) is delimited by the amount of the soup. *die Suppe essen* ' to eat the soup' implies that all of the soup will be eaten. *die Suppe aufessen* cannot mean that a different amount of soup will be eaten. Similarly, in (8b), the predicative does not change the endpoint, in fact, *malen* implies coverage with some color.[2] Importantly, the predicatives in (7,8) are not delimiters. We will refer to them by a term from the Gestalt framework, to be introduced in 1.3., *criterial spell-outs*. A criterial spell-out is a complement that does not induce any extra dimension of transition (change of state) in addition to the one induced by the verb.

The predicative in (8b) has a different function again from the one in (9):

(9) er schrieb die Seite voll
he wrote the page full

In this case, the predicative specifies the property of the object which delimits the event, namely the extent of the object. It differs from the examples in (5) in that there is a more direct link between the relation *write* and the 'fullness' of the page than between the singing and the richness of the family. However, it is not a criterial spell-out.

The constructions in (6b, 7b, 8b) illustrate the only allowed combinations of two delimiters in one sentence: one of them acting as an extension or elaboration on the main relation, or changing the endpoint as in (6b), that is by 'demoting' a previous delimiter. Importantly, there really is only one 'active' delimiter.

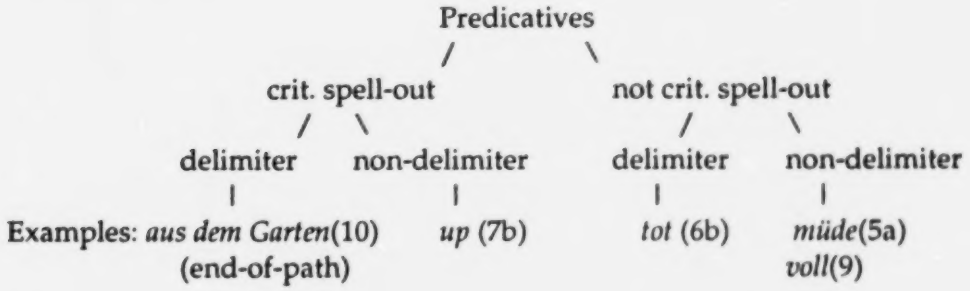
We may analyse end-of-path delimiters as presented in 1.2.3. as SC predicatives, as for instance in (10)[3]:

(10) er jagte die Kühe aus dem Garten
he chased the cows out of the garden

The PP *aus dem Garten* functions as end-of-path for *Kühe;* it is the element which turns the unbounded event *die Kühe jagen* into a delimited event. However, contrary to (5) this type of endpoint is given by the relation *jagen* 'chase', which involves some kind of directed movement. It is thus a criterial spell-out. Criterial spell-outs can thus act as delimiters as in (10) or just as elaborations, as in (7b,8b). Not all predicatives are delimiters and not all

[2]We are only considering *malen* in its affecting sense.
[3]This is what Hoekstra 1988 proposes.

predicatives are criterial spell-outs. Predicatives can thus be divided in the following way:



In section 3, we will see cases where end-of-path criterial spell-outs do not act as delimiters, but cede this function to other elements with a specific end-of-path interpretation. Therefore, although end-of-path complements can be regarded as predicatives, we will refer to them specifically by end-of-path.

1.1.5. Aspectual markers.

Russian has aspectual prefixes which act as delimiters, as exemplified in Tenny (op.cit., p. 58):

(11)

kurit'	"smoke"
vykurit'	"finish smoking"
dokurit'sja	"smoke to a climax"
zakurit'	"begin to smoke, light up, have a smoke"

These prefixes convert verbs describing non-delimited situations into verbs describing delimited situations. Some prefixes may have this effect but altering the meaning of the verb slightly :

(12)

citat	"read"
perecitat	"reread"
zacitat	"read out"
docitat	"read up to"

As we will see, prefixes in German have a similar effect although they share properties with the other delimiters.

1.2. Non-cooccurrence.

What is interesting about the different types of delimiters is that they do not cooccur in their function as delimiters. According to Tenny, there may be"only one 'delimiting' associated with a verb phrase" (see Tenny, op.cit.:149). The example she gives shows the incompatibility of two resultatives, as in (13) and of two end-of-path specifications, as in (14), Tenny's (53):

(13) *John washed his clothes clean white

(14) *push the car to New York to San Diego

The only possibility for combining two goal phrases is to have one specifying further the other (Tenny's 54, with reference to Gruber (76)):

(15) John sent the book to New York to Bill

Thus there is only one endpoint to the situation, the second PP "refining or elaborating" on the first. Usually, the first goal PP is the most general. There are, however, two ways to interpret (16)[4]:

(16) he pushed the car out of the mud onto the road

We can either give the sentence the interpretation as suggested for the previous example, with the second PP elaborating on the first, or take the last PP as the End-of-path with the first PP elaborating on it. Importantly, the two PPs have to be at the same level, i.e. naturally consecutive, to be interpreted as refinements of one another, as can be seen from (16):

(17) ?he pushed the car out of the mud to town

Similar to delimiters of the same type, delimiters of different types do not cooccur either in their function of delimiters. To illustrate, we look at delimiting objects (as under 2.) and end-of-paths. Both may delimit a situation and both may occur in the same constellation. However, only one of them, either the end-of-path or the direct object, may act as the delimiter in one and the same constellation. This property is exemplified by the *spray-load*-alternation in English:

(18) a. he loaded the hay on the wagon
b. he loaded the wagon with hay

(19) a. Jeremiah sprayed the paint on the wall
b. Jeremiah sprayed the wall with paint

Both pairs of constructions in (18,19) express telic situations: the natural endpoint of the a. sentences is reached when all of the hay is on the wagon or all the paint on the wall; in the b. cases, it is the wagon and the wall which act

[4]Tenny comments on an example like (15) that an event may be delimited at most once inceptively and one completively (1987:183).

as the endpoints. Either the material or the surface/container can be the delimiting entity, but only one of them at a time. We can show that it is *the hay* in (18a) and *the paint* in (19a) which are the delimiters by replacing the NPs by indefinite NPs. Recall that the entity acting as delimiter, or acted upon by a delimiter, must be of a specified amount.

(18) c. he loaded hay on the wagon for hours/*in two hours

(19) c. he sprayed paint on the wall for hours

The *spray-load*-alternation can thus be viewed as a change of delimiter. Another example showing this uniqueness of delimitation has been discussed by L. Johnsen (1991:75), (although in a different discussion) :

(20) a. er lief in die Stadt
he ran to town

b. er lief sich müde
he ran himself tired

c. er lief sich müde *in die Stadt/in der Stadt
he ran himself tired to town /in town

In (20a) the end-of-path acts as the delimiter, in (20b) the small clause *sich müde*. (20c) shows that such a small clause predicate is not compatible with the specification of an end-of-path.

Similarly, inherently delimited relations such as *kill* and *die* do not combine with resultatives or aspectual delimiters unless the predicative acts as an elaboration on the relation. There are some apparent exceptions in German, where a delimited verb combines with a delimiting prefix, such as *sterben - versterben*. However, it is possible to consider the prefix an extension, in the sense of 'being AWAY'.

The fact that the elements in 1.2.1-5 do not cooccur corroborates their status as delimiters. Intuitively, there can only be one temporal boundary in a situation: if there were two endpoints that had to be reached then at least one of them couldn't be an endpoint, delimiting the event.[5]

We have to distinguish between participants that are delimiters and participants that have to reach the endpoint specified by another delimiter: in some cases, the target of the activity is the delimiter (*eat the apple, load the wagon*) in others the target of the relation is the entity that has to reach the endpoint made explicit by the delimiter (*he sent the letter to his friend, he made the neighbour*

[5] In Tonne's terms, this would mean the existence of two scales for a monotonic participant (Tonne, 92, this issue).

happy). The entity that has to reach the endpoint can be the subject: in *he flew away, he* is the participant that has to reach the limit given by *away*.

Concluding, we formulate the following principle on the appearance of delimiters:

(21) **A constellation can contain only one delimiter**.

where the constellation is the syntactic expression of a situation (cf. Smith, op. cit.). (21) thus entails that there may be be only one delimiter to a situation.

1.3. Representation.

Delimitedness involves conceptual and syntactic properties, as seen in 1.1.1.-5. To represent the interdependence we use the modell of the Gestalt Theory as developed in Dimitrova-Vulchanova & Hellan 1993. This framework proposes a level of representation which combines semantic and syntactic dimensions. At Gestalt level, conceptual values represented by binary features defining the more traditional role properties, transitional properties and aspectual properties are related directly to morpho-syntactic constituents, as illustrated in the diagrams below. We will merely represent those conceptual and syntactic values that are of direct relevance to delimitedness and refer the reader to Hellan (this issue).

Properties under the Gestalt node are termed *global* features since they characterize the construction as a whole. It is an important point that some Gestalt properties come directly from the verb: such as criteriality and transition. Telicity generally results from the properties of the whole constellation. Even a punctual verb depends on the definite nature of the object for heading a telic Gestalt.

The conceptual features which are relevant to the representation of the delimiters are the following (defined for their positive value):

+transitional: refers to change of state or traversal, can reside in the relation itself or be expressed by a predicative but is essential to delimitedness.

+exchange: the root image is 'exchanged into' the result image; that is the two are not organically connected, as criterial spell-outs are to the activity itself; cf. (5, 6b).

+criterial: criteriality are (observable or entailment) properties of the situation which decide whether the event is correctly described by the construction

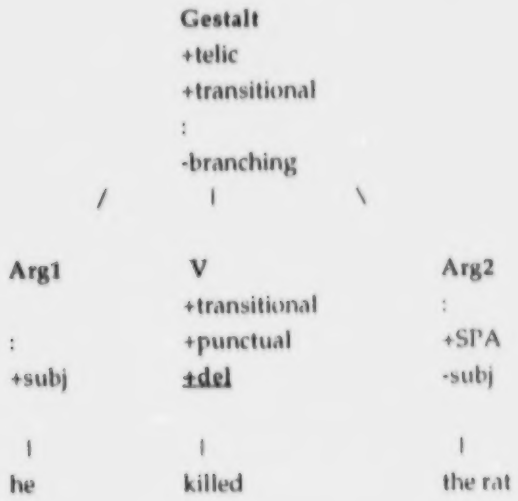
Of the syntactic features of the Gestalt, we only define *branching*:

+branching: applies to the four combinations of structures, transitive or intranstive, with a predicative. +/-transitive, +/- branching define the possible syntactic dimensions of the gestalt: SU V, SU V DO , SU V Pred, SU V DO Pred. The feature +transitive at the global level will result in a construction with two constituents, defined as +subj or - subj.

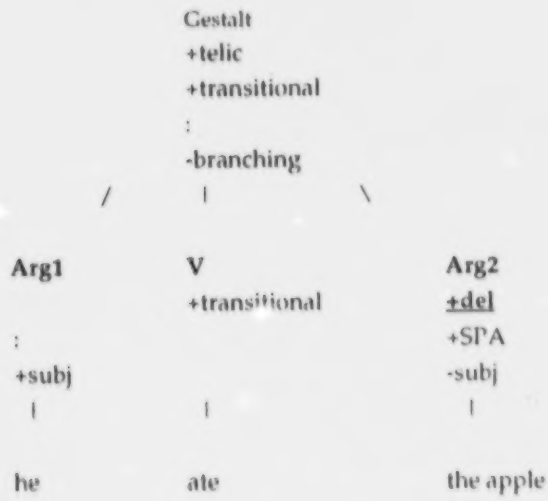
+SPA refers to specified amount.

We now turn to the representation of the five types of delimiters presented in 1.1.1-5:

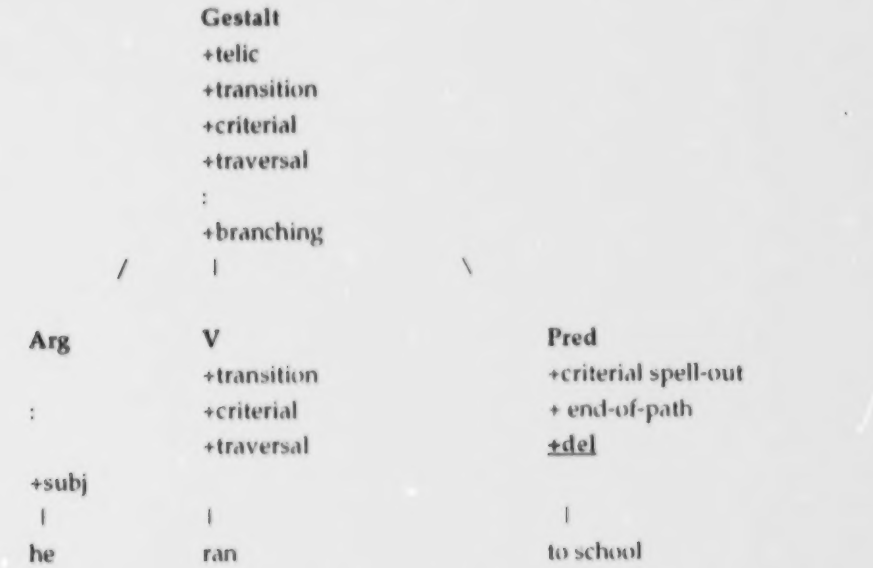
1. The delimiter is the verb itself



2. The spatial extent or some property of the target participant is the delimiter.

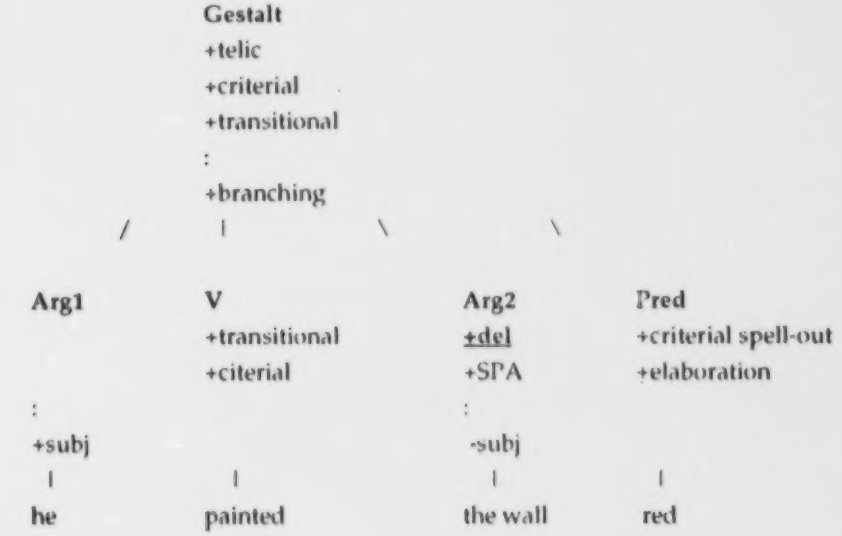


3. The End-of-path acts as the delimiter



4. The delimiter is a resultative small clause. We illustrate three possibilities: either the main relation selects a property of the object as delimiter (the predicative acts as elaboration on the main relation), or the predicative determines the property (again the object is the delimiter), or the predicative is the delimiter.

a.



b.

Gestalt
+telic
+transition
+criterial
:
+branching

Arg1	**V**	**Arg2**	**Pred**
	+criterial	**+del**	**+result**
:	**+transitional**	**+SPA**	
+subj		**-subj**	
he	wrote	the page	full

c.

Gestalt
+telic
+transitional
+criterial
:
+branching

Arg1	**V**	**Arg2**	**Pred**
	+criterial	**+SPA**	**+result**
:		:	**+del**
+subj		**-subj**	
er	schlug	die Fliege	tot
he	hit	the fly	dead

5. A prefix acts as the delimiter.

Gestalt
+telic
:
-branching

Pref **_ V**
+del **-del**

zakurim!?
shall we have a smoke

In the next section, we will look more closely at the correlation between telicity and properties of the direct object. As seen in the representations, the direct object appears as delimiter both in root clauses and in SC structures.

2.0. Mapping regularities.

There are two properties that are regularly associated with transitive constructions: telicity and affectedness. We have already noted the connection between DO and delimitedness: the referent of a direct object may be interpreted as the conceptual delimiter of a situation when the relation specifies some kind of traversal of that referent. Affectedness has been associated with transitivity in a more general way, in the sense that an affected object is to be realized as the direct object (Booij 1992). Tenny has a proposal of bringing affectedness and delimitedness together

First we will discuss the connection between direct object and telicity, then affectedness and transitivity.

2.1. Direct objects and Telicity.

As pointed out by Smith (op. cit.), properties of the constellation determine the categorization of a situation, that is its situation type. This is illustrated in (22):

(22) a. he reads the book
b. he reads in the book
c. he reads novels

The construction with the definite NP expresses a telic situation, the NP *the book* representing the natural endpoint of the activity (by having a spatial extension that can be 'traversed'); (22b) containing the PP refers to an atelic situation type, an activity. (See Durst-Andersen & Herslund, 1993, for examples from Danish). Furthermore, the object has to be a specified amount to lead to telicity. The constellation in (22c) is thus atelic since the object is a bare plural. For a discussion on the SPA property, see Tenny (op. cit), Krifka (op.cit.).

However, transitivity is not strictly related to telicity. Transitive constellations may express all kinds of situation types (*believe the story, surround the garden,*); correlating with telicity is transitivity only when the object is "affected" or when the relation is punctual.

2.2. Transitivity and Affectedness.

It is commonly taken as a generalization that "affected arguments are always expressed by a direct internal argument" (Booij and van Haaften 1988). This generalization is illustrated by pairs like:

(23) a. I hit him
b. I hit at him

Only (23a) expresses that the target of the activity gets hurt. In some cases, the distinction is more subtle:

(24) she rode the horse
she rode on the horse

According to Tenny, there is an intuitive sense in which the horse is more affected in the transitive version than in the PP construction even though the verb does not express a change of state of the object.[6]

In this sense, affectedness has been taken as the relevant factor in many syntactic phenomena. For instance, the notion appears as the restricting factor in the formation of noun phrase passive (Tenny's 31):

(25) a. the Mongols' destruction of the city
b. The city's destruction by the Mongols

(26) a. Sally's pursuit of the cat
b. *The cat's pursuit by Sally

(25 b) and (26b) are what Andersen (1979) refers to as noun phrase passives since the object is preposed. (26b) is illformed since the object is not affected, i.e. does not undergo a change of state, by the action expressed by the verb.

However, as it stands, the definition of affectedness in terms of change of state does not capture constructions like: *the play's performance, the poem's translation by John*. The objects are not changed in the course of the event, yet the crucial constructions are found. Tenny points out that what characterizes these objects and the object in (25) is that they have the capability of delimiting the event. So she proposes to define affectedness in terms of delimitedness (Tenny's numbering):

(3) A verb is an affectedness verb iff it describes an event that can be delimited by the direct argument of the verb.
(4) A syntactic argument is an affected argument iff it is the direct argument of an affectedness verb, and its referent delimits the event described by the verb.

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[6]There is not always such a distinction with respect to affectedness between a transitive and an oblique construction:
he entered the room
he entered into the room
Naturally, the effect depends on the type of relation that is expressed. This is similar to the lack of effect of -SPA with certain verbs, as noted by Krifka (1992:31):
I saw zebras for hours
I saw a zebra for hours
'Observed' objects do not have an influence on the situation type, while 'consumed' objects do.

This definition of affectedness correctly describes the class of verbs that undergo middle and noun phrase passive formation: the object is capable of delimiting the event through its spatial/temporal extent - this is a good description of the relevant cases and includes the problematic verbs of performance and even verbs of motion like 'cross' as in 'cross the desert'.

What Tenny does is start from the generalization that affected arguments are direct internal arguments. Direct internal arguments, according to Tenny, measure out the event, and a subclass of them may also delimit an event. These correspond to the class that the notion affected had been designed to describe - but didn't capture. Tenny thus seems to replace the notion of affectedness - which had to be extended - by delimitedness.

The notion of affectednes has been used in another descriptive rule, namely the effect of *be*-prefixation in germanic languages (Booij, op. cit.). In this connection total/complete or *holistic affection* is used, where holistic affection is supposed to mean that all parts of the object undergo some change or are under the effect of the activity described by the verb.[7] Take for instance *das Beet mit Blumen bepflanzen* 'to *be*-plant the garden with flowers' as opposed to *Blumen in das Beet pflanzen* 'plant flowers in the garden': only the *be*-version implies that the whole surface is covered with flowers. In this case, affectedness seems to be replaceable by the delimiting capactiy of the object as proposed by Tenny, more concretely through its spatial extent. However, not all *be*-constructions refer to delimited events. It seems to be a condition that the object have a spatial extent that can delimit the event. For instance, it is not quite clear how the object could delimit the event in the case of *be-liefern*: *diese Firma beliefert uns schon jahrelang*. 'this company *be*-delivers us already for years'. So neither total affectedness not delimitedness describe this effect of *be-*. However, with the prefix, the activity appears directed more directly towards the object; in a sense, with *beliefern* , all needs are covered with respect to the entity delivered, and this on a more regular basis.

To refer to this type of effect of *be-*, we use the notion of increased affectedness or involvment, where affectedness is understood without connotation of change of state. In a sense, *be-* has still the same effect as above, namely that of turning the relation into one that expresses affectedness in the sense of Tenny, more specifically, some kind of traversal. But the object does not have the necessary delimiting properties.

Not only *be-* has this effect: the difference between *er folgte mir* 'he followed me' and *er verfolgte mich* 'he pursued me' is most accurately described

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[7] Günther (1987) gives interesting references to characterizations of the special effect of *be-* : "Ausdehnung der Handlung über den gesamten Gegenstand" (Adelung 1793); Es liegt in dem *be-* die viel-oder allseitige Einwirkung, die ganze oder volle Bewältigung" (Grimm 1826); "Diese *be-* gleicht einer Krallenpfote, die das Objekt umgreift und derart zu einem eigentlichen und ausschließlichen Objekt macht (Weisgerber 1958). However, reference is made to proponents of other ideas as well: v. Polenz 1973: "Bei unserer Beschreibung verzichten wir auf das was in der Literatur häufig als "stärkere Objektsbezogenheit.... bezeichnet wird." Similarly, Günther (87) defends the view that *be*-prefixation is more like the passiv construction, without the involvment of meaning alternation.

as an increase in affectedness: with *verfolgen*, the object is more bothered. However, here the relation does not seem to have the necessary properties to lead to delimitedness.

Thus, while affectedness can be replaced by delimitedness, and an affected argument by a delimiting argument in some cases, it still is required in the description of undelimited events. Increased affectedness arises from the lack of delimiting properties of the object, or of the relation.

What this means for the correlation between transitivity and delimitedness is that the direct object does not by itself imply delimitedness: both the relation and the object must have certain properties.

2.3. *Atelicity.*

Concerning this mapping between delimiting participant and direct object position, it is interesting to note the correlation between certain PPs and atelicity, like the one illustrated in (22). In German, the same situation type difference is observed:

(27) a. er las die Bibel
he read the bible

b. er las jeden Abend in der Bibel
he read every evening in the bible

(28) a. er schrieb einen Brief
he wrote a letter

b. er schreibt an einem Brief
he wrote on a letter

There is a similar shift in situation type involving end-of-path and place complements, as illustrated in the pair *dance into the hall- dance in the hall.* The construction with the end-of-path PP is telic, stating an endpoint, while the locational PP refers to the place where the activity takes place without providing a temporal bound. Note that the preposition in the examples in (27b, 28b) are locational: *an, in.* [8] Since locations are not delimiters, it is not surprising that they are used to express atelic situations, as opposed to goals and direct objects which can be said to delimit in virtue of their extension.

In some languages, the partitive case conveys atelicity of the type exemplified in (27b, 28b). See Tenny for some examples from Finnish. It seems that some PP constructions in German and Norwegian have this partitive interpretation: in Norwegian: *spise av kaka* 'eat from the cake', *drikke av vinen* 'drink of the wine', in German: *vom Kuchen essen, vom Wein trinken*....In these

[8] Bartsch notes that the English progressive form had been an infinitive nominalization within a local prepositional phrase, *be on* a-*en*. Cf. the German and Dutch imperfective: *am ---en sein/ aan het ....en zijn.*

cases, one could argue that what is understood is a definite NP: *ein Stück vom Kuchen essen, einen Schluck vom Wein trinken.*

However, that it is not a determinate part which is understood but rather something like 'a little' can be seen from the tests revealing the situation type:

(29) a. er hat *in zwei Stunden/stundenlang vom Brot gegessen
he has *in two hours/for hours from the bread eaten

b. er war vom Kuchen am Essen => er hat vom Kuchen gegessen

The entailment from the imperfective to the perfective indicates that the situation is presented as an activity (cf. Dowty, op. cit., Smith, op. cit.) In either case, the locational or partitive PP appears with the less affecting, non- limited, partial reading, in contrast to the NP in the direct object position with the affecting and delimited interpretation.

The conclusion of this discussion is thus in line with Tenny: there is a correlation between a syntactic priviledged position and a semantic priviledged position, i.e. a delimiting property (through spatial extent, or some other property) at a conceptual level, and direct argumenthood in syntax. This correlation can be expressed as a mapping principle between conceptual properties and syntactic structure:

(30) Participants that act as delimiters due to their spatial extent or some other property are expressed as direct objects.
Participants that have to reach the endpoint represented by other delimiters are realized as direct objects as long as there is a source (agent) expressed. Otherwise they become subjects.

3. Prefixation in German.

German has the following non-lexical prefixes: *be-, ent-, er-, ver-, zer-.*
They change the meaning of a stem in a near-predictable way- that is their interpretation may vary depending on the nature of the relation. A rough characterization of their contribution is given in (31)[9]:

[9]These prefixes do not attach to verbs exclusively. They may choose nominal bases and have related effects. be- +N for instance means: 'outfit with' as in *bekleiden*: 'outfit with cloth; *ent-*+ N means 'take away': *entfesseln*. Furthermore, they combine with adjectival bases: *bereichern* 'enrich', *entleeren* 'empty'. An investigation of these and other more complex cases (*beeinflussen* 'influence') is beyond the aim of this paper.

(31)

er-	COMPLETE successfully in favor of Protagonist (subject)
be-	COVER[10]
ent-	OUT OF
ver-	AWAY FROM/USE UP by V
zer-	DECOMPOSE

The characterization in (31) is a rough generalization of their meaning contributions, but it is possible to reduce more specific interpretations to these general ones. For instance, the combination of *ver-* and *laufen* 'run' in *sich verlaufen* 'loose one's way' can be understood as 'run with the result that one is AWAY, not knowing where one is'. The same reasoning goes for *sich versprechen* ('forsnakke seg'): talk oneself AWAY from what one was going to say; *etwas versprechen* 'to promise': talk AWAY something'. The USE UP connotation for *ver-* is highly related to the AWAY function: *die Wolle verstricken* implies that the wool is not available anymore; an end-of-path extension may, marginally, specify this AWAY: *die Wolle zu einem Pullover verstricken*.

The following examples illustrate the individual effects of the different morphological operations:

(32)

er-

a. er kämpfte für den Frieden/das Vaterland
he fought for peace/his home country

b. er erkämpfte den Frieden/*das Vaterland
he OBTAIN-fought peace/*the home country

be-

c. er pflanzte Blumen in den Garten
he planted flowers in the garden

d. er bepflanzte den Garten mit Blumen
he COVER-planted the garden with flowers

ent-

e. er floh aus dem Gefängnis
he fled out of the prison

---

[10]Reasons to describe *be-* as COVER will be given in 3.3

f. er entfloh (aus dem Gefängnis)
he OUT OF-led out of the prison

ver-

g. er jagte die Kuh vom Rasen
he chased the cow from the plain

h. er verjagte die Kuh (vom Rasen)
he AWAY-chased the cow

zer-

i. er drückte gegen die Tür
he pushed against the door

j. er zerdrückte die Kartoffel
he TO PIECES-pushed the potato

There are selectional restrictions on the prefixation operation; for instance, from the meaning specification, we may expect *ver-* (in the sense of AWAY FROM) to attach to motional or activity verbs. It is somewhat harder to predict that we can get *den ganzen Tag verschlafen* 'use the day up by sleeping' and not *den ganzen Tag verwaschen*, meaning 'use the day up by washing'. There is another problem concerning selection, namely that the derived item may be restricted with respect to the object: *er warf den Ball* 'he threw the ball'- *er verwarf die Idee/*den Ball* 'he *ver-*threw *the ball/the idea'. (32b) is another example of this selectional restriction.

Except for *be-* the prefixes are not very productive, but there are new formations: *entnuklearisieren, verfeaturen, verinszenieren.*

3.1. Prefixes as delimiters.

From the example pairs in (32), we might conclude that the prefixes in German are delimiters of the type described in 1.2.5., that is aspectual markers. However, they exhibit similarities with the other delimiters too. The prefixes may represent the end-of-path similar to the delimiters in 1.2.3, they may form a unit with the verb which makes them similar to the delimiters in 1.2.1, or they select the spatial extent of an object. Furthermore, there have been proposals in the literature to analyze *be-* as a predicative in a SC (Hoekstra 1992, Hoekstra and Mulder 1990). A fact that must be noted is that the prefixes not always contribute to delimitedness. In the following we will look at the aspectual properties of the prefixes and concentrate on cases where they have delimitedness effects.[11] For *be-*we will have an account for the non-delimited cases too.

[11]The delimiting nature of prefixed elements has been noted by other researchers, see Esau 1973:160; Hoekstra 1992.

Aspectually, the prefixes differ with respect to the constancy of their effect: *ent-* and *zer-* always lead to bounded situation types, that is accomplishments or achievements in Vendler's classification. *ver-* and *er-* regularly exhibit this effect too but may preserve the atelic situation type of the underived relation. The same goes for *be-* but it has preferably an atelic reading; however, some combinations express telic situation types:

(33) a. Jedes Jahr bepflanzt er den Garten mit Bäumen
Each year COVER-plants he the garden with trees

This construction makes sense only under the assumption that somebody eliminates the trees each time or that they do not survive from one year to the next. The underived construction does not require this assumption:

b. Jedes Jahr pflanzt er Bäume in seinen Garten
Each year plants he trees in his garden

Importantly, the prefixes may induce telicity: from atelic predicates, they can produce telic situation types.[12] This property is illustrated in (34a,b), where (34a) is atelic, as can be seen from its compatibility with a durative adverbial and (34b) is telic:

(34) a. er kämpfte für den Frieden *in zwei Tagen/jahrelang
he fought for peace *in two days/for years

b. er erkämpfte den Frieden in zwei Tagen/*jahrelang
he OBTAIN fought peace in two days /*for years

The other unprefixed constructions in (32) are telic already, but importantly, this telicity is not verb-inherent in all cases, but results from the constellation. *fliehen* in (32e), for instance, is atelic by itself, as seen from the compatibility with durative adverbials:

(35) a. er floh schon tagelang/*in zwei Tagen vor der Polizei
he fled already for days/*in two days before the police

b. er floh *eine halbe Stunde lang/*in 5 Minuten aus dem Gefängnis
he fled *for half an hour/*in five minutes out of the prison

It is the specification of the end-of-path which makes the construction in (32e) telic. However, as seen in (35b), the event is not compatible with durational adverbials even when they involve completion. The reason is that the prefixed

[12]This is the property that Roberts (1987) ascribes *out*-prefixation.

relation becomes rather instantaneous: *flee out of* something refers to the crossing of some border.

The important point here is that the same effect is achieved through the addition of the prefix: the relation is instantaneous and telic. Moreover, the OUT OF reference is now conveyed solely by the prefix and not by the expression of the end-of-path. This can be seen from the possibility to omit the end-of path:

(36) er entfloh vor ein paar Tagen (aus dem Gefängnis)
he OUT OF-fled before a few days (out of prison)
'he escaped (from prison a few days ago'

To show that the instantaneous interpretation resides in the prefix *ent-*, and does not depend on the PP, we consider another example:

(37) a. der Vogel flog tagelang ohne zu fressen
the bird flew for days without eating

b. der Vogel flog *stundenlang/*in 2 Stunden aus dem Käfig /in den Wald
the bird flew *for days/*in two hours out of the cage/into the wood

c. der Vogel entflog (aus dem Käfig/in den Wald) *in zwei Stunden
the bird OUT OF-flew (out of the cage/into the wood) *in two hours

fliegen itself is atelic as can be seen from its compatibility with a durative adverbial; with the specification of an end-of path, the constellation becomes telic. At the same time, the relation becomes punctual: no adverbial implying duration, whether completive or not, is acceptable.With *ent-* prefixed, the constellation is telic too, and, importantly, it is telic with and without the specification of the end-of path in (37c). This means that the prefix induces telicity.[13]

An example where the prefix only induces telicity and not punctuality is *ver-* in (32g,h): *jagen* by itself is atelic (cf. *er jagte sie tagelang* 'he chased her for days'), *verjagen* is telic (*er verjagte sie in einer Stunde*'he away-chased her in a hour'). The same effect is achieved by *zer-* in (32i,j).

We can thus say that the prefixes induce telicity. Furthermore, the prefixes may induce inchoative and ending readings: *klingen* 'sound', *erklingen* 'start to sound', *verklingen* 'fade out', *entflammen, entzünden* 'inflame'; *erbleichen* "become pale', *verbleichen* "fade away'. These interpretations are still within the

[13]Not all *ent*-verb combinations are punctual: *entwickeln* 'develop', *entfernen* ' take away', *entflechten* 'disentangle' are only two examples.

range of the specifications in (31), for instance *entzünden* means 'light up OUT OF inside. These interpretation possibilities together with the bounded readings suggest that we characterize the suffixes as delimiters in the sense presented in the previous section. Further discussions will show that this definition has to be moderated, in that some prefixes induce delimitedness via another delimiter.

3.2. Non-cooccurrence.

The characterization of prefixes is corroborated by another property ascribed delimiters, namely their uniqueness in a sentence, cf. 1.3. The prefixes do not combine with each other and they do not cooccur with other delimiters. The fact that we do not find two prefixes is not given directly from their more concrete meaning contributions although it seems that they are partly complementary: *er-* meaning TOWARDS, *ent-*AWAY FROM, *ver-* AWAY,..: in principle it should be possible to have *ent- ver- Stem* meaning AWAY FROM/ OUT of TO AWAY... or *ent- er-Stem*: AWAY FROM- TOWARDS... In fact, as seen above it is possible to combine *ent-* with a goal complement, or *ver-* with a source as seen above in (32h) and (37). Thus, the combination of the prefixes should not be precluded neither by their semantic contribution nor by their aspectual contribution. We have seen that the end-of-path specifications cooccurring with *ver-* and *ent-* are not acting as delimiters, since they may be deleted without changing telicity. The end-of-path complement seems to act as a refinement or specification of the prefixal delimiter. The question now is why two prefixes should not have this possibility of cooccurring, with only one of them acting as the delimiter, as in the case with *ent-* and the specification of the end-of-path. An explanation may be the general character of the prefixes (cf. the specification in (31)): it seems that specifications or refinements must be exactly that: more specific, refining. We can deduce this restriction from the discussion of the occurrence of two goal phrases where one is seen as an elaboration of the other, cf. (15) and (16) repeated here:

(15) he sent the book to NY to Bill

(16) he pushed the car out of the mud onto the road

Importantly, in contrast to the prefixes, these PPs are contentful.

Now there are complex constructions with two prefixed elements, where one is a prefix and the other is a preposition which we in this context will refer to as a particle:

(38) a. er vertraute ihr sein Buch an
he trusted her the book on

b. er hat ihr sein Buch anvertraut

(39) a. er verkauft das Lager aus
he AWAY buy the storage out
'he sold the storage out'

b. er hat das Lager ausverkauft

(38) and (39) illustrate a pecularity which makes it possible not to view them as two prefixes. The particle appears incorporated only in the past participle form and in the infinitive. Elsewhere, the construction has the form of small clause construction.

However, whether we consider *an+ver* as two prefixes or as the combination of a prefix and a small clause predicate as anticipated in (38a, 39a), we are interested in eliminating one of the two elements as delimiter. There are several indications that this can be achieved. First, the particle may be interpreted as a specification since it is more contentful than the prefix.[14] However, there is not a big difference and as we will see in 3. 4., the lack of a significant difference in content can be taken as the reason for their non-cooccurrence in the majority of cases. Second, a closer examination of the complex combinations shows that there are two other possibilities for allowing their cooccurrence: either the prefix does not act as delimiter, as in *vertrauen* which is atelic (cf. *er hat ihr jahrelang/*in zwei Jahren vertraut*); hence a particle may occur as the delimiter; or the particle specifies a new delimiting point. Thus, *ausverkaufen* 'sell out' has an additional meaning relative to *verkaufen* 'sell', and it seems that *aus* is the new delimiter with respect to the new participant. It may be noted that combinations of particle and prefix do not occur regularly.

Generally, prefixes do not cooccur with small clause predicate at all, as expected if both are delimiters:

(40) a. er baute die Wiese *voll mit Wochendhäusern*
he built the lot plenty with weekend houses

b.*er *be*baute die Wiese *voll*
he COVER the lot plenty

(41) a. er schloß die Tür *zu*
he locked the door closed

b.*er *ver*schloß die Tür *zu*
he AWAY locked the door close

[14]The more general character of the prefix is exemplified by constructions like *verteilen*, which means both *auf-teilen* 'divide' and *aus-teilen* 'distribute'; *verstreuen* 'disperse' means *aus-streuen* or *aus Versehen streuen* 'stray unintentionally'.

(42) a. er riß das Papier *in Stücke/über*
he tore the paper into pieces/ over

b. er *zer*riß das Papier ?*in Stücke/*über
he zer-tore the paper ?into pieces/*over

(43) a. er drückte den Hut *flach*
he pushed the hat flat

b. er *zer*drückte den Hut **flach*
he zer-pushed the hat *flat

c. er *zer*kochte die Kartoffeln ?*zu Mus*

(44) a. er kämpfte sich *reich*
he fought himself rich

b. er *er*kämpfte sich eine Lohnerhöhung/*sich reich
he OBTAIN for himself a payment raise/*himself rich)

The incompatibility of some of the combinations could be accounted for by the fact that the small clause predicative and the prefix have the same content, such as *voll* and *be-*, a point to which we return. However, different predicatives, if possible at all, do not improve the combinations, as seen in (45):

(45) *er bemalte die Tür *rot*
he COVERpainted the door red

b. er *be*malte die Tür *mit roter Farbe*
he COVERpainted the door with red color

The PP in (45b) is not a predicative but seems required as an extension to *be-* if *bemalen* is to be interpreted as delimited by the object. For further comment on *malen - bemalen mit...,,* see the discussion around (50) below. Other prefixes occur with a PP extension as well, cf. *ent-* and the end-of-path, although sometimes marginally as in (42b, 43c). Notably the situations in these examples are delimited without the PP. Commenting on the incompatibility of prefixes and SC predicatives if these are adjectives or particles, and that end-of-path are the best PP extensions, we make use of Gruber's view concerning examples like (15) that "Position may be specified in greater degrees of accuracy" (as opposed to possessional and identificational verbs which have specifications "that are automatically of absolute specification" Gruber 1976:82). The fact that only PP

elaborations are permitted and not particles in the same function will be ascribed to the lack of elaborating content of particles.

Regarding the general non-cooccurrence of two prefixes or of a prefix and another delimiter, at least in their delimiting function, we conclude that the prefixes in German can be counted as delimiters. Whether the event actually is delimited by the prefix depends on properties of the base relation, properties of the object and the prefix. *verfolgen* 'pursue', for instance, is not delimited without the specification of a goal since the effect of following someone does not easily entail that the object is directed to an end-of-path.

In the next section we discuss more specifically the effects of prefixation.

3.3. *Effects of prefixes.*

Although the prefixes have received the common status of delimiters, they have different effects. We have already mentioned that *ver-*, *er-* and *be-* not always lead to telicity. We will look more closely at the different effects of the prefixes.

First, the prefix may impose itself as the delimiter as exemplified in (46):

(46) a. er würgte sie
he 'wrung her neck'

b. er erwürgte sie
he strangled her

c. er tränkte die Blumen
he watered the flowers

d. er ertränkte die Blumen
he drowned the flowers

Then, the prefix may have the effect of demoting a delimiter. (47) illustrates how the end-of-path acting as a delimiter or endpoint is exchanged by the prefix *ver-* :

(47) a. er trieb sie über die Grenze
he chased her over the border

b. er vertrieb sie *?über die Grenze/aus ihrer Heimat
he AWAY- chased her over the border

In this example, the event of *treiben* is delimited by the end-of-path. When the prefix is added, the specification of the end-of-path is rather superfluous, but the source may be expressed. In cases, where the end-of-path is not directly

ungrammatical, it is interpreted as an extension to the main relation (cf. 36). Another example of change of delimiter is the following:

(48) a. er schlug sie
he beat her

b. er erschlug sie
he dead-beat her

c. er schlug sie tot
he beat her dead

schlagen may be unlimited, that is if interpreted as iterative; if the situation is interpreted as delimited, we may say that the V is inherently delimited. The affixation of *er-* gives a new inherently delimited relation: *erschlagen*, expressing the ultimate completion of 'beat someone': 'beat to death' and is equivalent to c (cf. 6b). The effect of *er-* is thus to give a new endpoint. In some prefixation constructions, the derived predicate involves a different delimiting participant:

(49) a. er baut das Haus
he builds the house

b. er baut ein Haus/Häuser auf das Grundstück
he builds a house/houses on the ground

c. er baut das Grundstück voll (mit Wochenendhäusern)
he builds the ground full with weekendhouses

d. er bebaut das Grundstück mit Wochenendhäusern
he COVERS-builds the lot with weekend houses

The German *be*-prefixation corresponds to the English *spray-load* -alternation, cf. (18,19). At this point, we have to comment on the specification we have given to *be-* in (31), namely COVER. We justify this specification through pairs like (49b,d) and (33a,b), repeated here:

(33) a. Jedes Jahr bepflanzt er den Garten mit Bäumen
Each year COVER-plants he the garden with trees

b. Jedes Jahr pflanzt er Bäume in seinen Garten
Each year plants he trees in his garden

Importantly, these examples illustrate what we consider a crucial property of *be*-prefixation: *be-* prefixation promotes a surface, and not a container. Consider the following:

(50) a. er goß Kaffee in die Tassen/ er goß die Tasse voll
he poured coffee in the cups/he poured the cup full

b. *er begoß die Tassen
he be-poured the cups

c. er goß Wasser auf die Blumen
he poured water on the flowers

d. er begoß die Blumen mit Wasser
he be-poured the flowers with water

In the example in (51), it is understood that the load somehow is not in the car, but on top, and thereby we preferably are referring to a lorry?:

(51) a. er lud den Wagen voll/ das Auto voll mit Steinen
he loaded the wagon full/the car full with stones

b. er belud den Wagen / *den Container/?das Auto
he be-loaded the wagon/*the container/?the car

c. der Tisch war mit Geschenken beladen
the table was with presents be-loaded

b.* der Schrank war mit Geschenken beladen (meaning : it was full of presents)
the cupboard was with presents be-loaded

In the appendix, we give a list with *be*-verbs which have bases with a locational complement expressing a surface.[15] This requirement makes it difficult to view the holistic interpretation of *be*-verbs as the mere result of promotion to DO position. When *be-* is prefixed to a nominal root, the relation is one of coverage as well, this time meaning EQUIP WITH N, COVER WITH N (for examples,

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[15]There might be apparent exceptions to the generalization that *be-* requires surface complements:
er betrat das Zimmer/die Hütte/den Saal
er trat *in* das Zimmer/*in* die Hütte/*in* den Saal

er bewohnt den dritten Stock/ diese Haus schon lange
er wohnt *im* dritten Stock
First, theses cases are exceptional from another point of view: they do not express increased affection (there is no difference in this respect in the english counterparts enter into-enter DO either). Second, the locational complements are not really regarded as containers.

see Appendix). Contrary to *be-*, *voll* can refer to coverage of surface and container (50a, 51a), depending on the relation. Now let's return to (49). Assuming that the meaning contribution of *be-* is appropriately described as COVER, it is natural that a different participant, with the relevant properties, namely one that has the extentional properties required by the predicate, replaces the direct object in (49a,b). From this, we may expect cases where *be-* does not choose a new delimiter, namely when the unprefixed relation already implies coverage of a surface, as for instance with *malen, streichen*:

(52) a. er malte die Türen
he painted the doors

b. er bemalte die Türen mit Ölfarbe
he COVER-painted the doors

die Türen malen implies that the doors are covered with paint, *the doors* act as delimiter. *bemalen* does not necessarily mean that the doors will be evenly painted, there will be some material over most of the surface. With *streichen*, the effect of *be-* deviates slightly:

(53) a. er streicht die Brote
he spreads the bread

b. er bestreicht die Brote mit Honig
he be-spreads the bread with honey

With *bestreichen*, the specification of the material is required. Since *be-* means COVER, and the verb expresses coverage already, we might expect that some difference is required. What is remarkable is that the underived constellations in (52) and (53) express activities with a very well- defined outcome or way of executing the action, while *be-* insists on the coverage and the material (through the *mit*-PP). We may note that the relations *streichen* and *malen* enter constructions that are more like the familiar *spray-load* alternations, with the properties as in (18,19) above: *Fragezeichen auf die Wand malen* 'paint question marks on the wall' and *Marmelade aufs Brot streichen*'put jelly on the bread'. But the point we wanted to illustrate with (53) was that these verbs can take a surface/spatial extent as the direct object even without a prefix, thus they contain some meaning element COVER already.

Regarding the properties of prefixes outlined here, it is important to note the similarity between the effects of the prefixes and the effects of SC predicates. in 1.2.4. The only effect that the prefix does not share with the SC predicative is that of acting as extension, cf. (7b, 8b), repeated here:

(7) b. er aß die Suppe *auf*
he ate the soup up

(8) b. er malte die Türen *rot*
he painted the doors red

This difference can be attributed to the general character of the prefix which is not suited to serve as elaboration.

We have noted that *be-*, *er-* and *ver-* not always induce delimitedness, whether directly or indirectly, that is via a property of the object. When the output of the combination (relation + prefix) is not telic, we expect that the end-of path can act as the delimiter:

(54) a. er folgte ihr bis ans Haus
he followed her to the house

b. er verfolgte sie bis an ihr Haus
he AFFECT-followed her to the house

Here, *ver-* does not supply the end-of-path, producing only increased affectedness, that is the activity bothers the object to a higher degree. Hence the end-of-path specification is natural. (54) illustrates an important syntactic correlate of prefixation: except for end-of-path delimiters, there will always be a direct object. The referent of this object is understood as more involved in the activity. Interestingly, a similar effect is found with *ent-*. Here, however, the promotion is from PP to indirect object as can be seen in (35d):

(35) c. er floh vor der Polizei/ aus dem Gefängnis
he fled before the police/out of prison

d. er entfloh der Polizei
DAT
he OUT OF-fled the police
'he escaped from the police'

Although the indirect object is not delimiting, it is interpreted as more affected, similar to the direct object of *beliefern*. Prefixation thus has the effect of directing the activity more directly towards one of the participants.

Summarizing, it seems that we can divide the effects of prefixation into two types: prefixes either are delimiters themselves, or they select a participant as the delimiter. Importantly, if the prefixes are delimiters themselves, they are not dependent on the object providing a spatial or temporal extent to express telicity. In both cases, they may eliminate an earlier delimiter. When the prefix

has an end-of-path interpretation, or when the complex relation becomes punctual, the prefix is considered the delimiter, in the latter case possibly together with V. Since the prefixes have the force to demote a previous delimiter, we will refer to them as *strong* delimiters. To express their special behaviour, we formulate the second principle on delimiters:

P2: **Prefixed delimiters act as strong delimiters.**

Since end-of-path can occur as elaboration, the prefixes are characterized as follows:

(55)

be-: COVER - indirect delimiter: selects spatial extent[16] of object as delimiter, prefix
ver-: end-of-path, delimiter, prefix
zer- : result, delimiter, prefix
er-: result, delimiter, prefix
ent-: end-of-path, delimiter, prefix

In a general sense, we will refer to the effect of prefixes as delimitedness-inducing. We are aware of the many exceptions and idiosyncratic interpretations. The aim here is to investigate the delimiting effects of prefixes and the effect of affixation on previous delimiters.

3.4. Preposition incorporation.

We have mentioned that there are some particles which apart from being slightly more specific, are rather similar to prefixes:

(56) a. die Rose blühte *auf*//ist aufgeblüht
the rose blossomed up

b. die Rose *er*blühte
the rose er- blossomed

(57) a. er jagte sie *hinaus*/*weg*/hat sie weggejagt
he chased her out

b. er *ver*jagte sie
he ver- chased her

[16]When the object has no spatial extent we do not expect the delimiting effect of *be-*.

However, these particles appear incorporated into the verb only in the infinitival and the past participle form, so we do not consider them prefixes.[17]

There is a small number of prepositions which either may incorporate or remain separate from the verb. By *incorporate* we thus understand: be prefixed without having the status as a dependent element, furthermore, form a unit with the relation in all forms, not only in the infinitive and past participle, as was the case for *anvertrauen -vertraut an* . What is interesting about these particles which incorporate is that they are not forced to do so by their status as dependent elements, as the prefixes are. This can be seen from the fact that there exist unincorporated forms along the incorporated ones. The question is whether some special effect is achieved by incorporation of the preposition. The difference between the incorporated and the unincorporated version may shed some light on the prefixation process.

durch is one of the prepositions appearing both incorporated and unincorporated:

(58) a. er lief *durch* den Wald
he ran through the wood

b. er lief *durch* den Wald (hin)*durch*
he ran through the wood through

c. er *durch*lief den Wald
he through-ran the wood

d. * er *durch*lief *durch* den Wald
he throughran through the wood

e. *er lief den Wald *durch*
he ran the wood through

f. *er *durch*lief den Wald *durch*
he throughran the woods through

Both (58 b) and (58c) can mean that he traversed the wood; (58b) states that he came out at the other side, while (58c) involves more the coverage of a distance, so that here, there is more weight on the extension of the wood. *durch den Wald* specifies the path and the second occurrence of *durch* in (58b) specifies the end-of-path. This interpretation of the PP P construction in (58b) is supported by the the application of the aspectual tests:

---

[17]Really incorporated elements are not separated from the stem by the past participle prefix *ge-*:
er hat sie an-ge-hört
er hat sie verhört
The existence of a *ge-* inside a past participle is thus indicative of the non-incorporated nature of the particle in question.

(59) a. er lief stundenlang/*in zwei Stunden durch den Wald
he ran for hours /*in two hours through the woods

b. er lief *stundenlang/in zwei Stunden durch den Wald durch
he ran *for hours through the woods through

c. er durchlief den Wald *stundenlang/in zwei Stunden
he through-ran the wood *for hours/in two hours

59a. is atelic as can be seen from the acceptability of a durational adverbial. 59b. is telic, here the preposition is repeated stating the end-of path. (59c) behaves like an accomplishment, showing that incorporation must be connected to the delimitedness of the situation. It is the extent of the *wood* which acts as the delimiter, the verb-prefix combination stating the way in which the wood is traversed. *Incorporation thus creates a relation which selects the spatial extent of the object as the delimiter*. How can this be achieved?

Consider (58d). Since the incorporated preposition does not cooccur with the specification of the path, we propose that *the incorporated particle has the Path interpretation*, this way making it possible to select the spatial extent of the participant as the delimiter.

What about the function of the construction-final *durch* in (58b)? Without the preposition, only path is expressed, cf. (58a). That this preposition/particle is the delimiter can be seen apart from the difference between (58a) and (58b) from the incompatibiliy with another delimiter:

(60) a. er lief durch den Wald zur Stadt
he ran through the wood to town

b. *?er lief durch den Wald durch zur Stadt
he ran through the wood through to town

(60a) contains a path and an end-of-path; (60b) cannot contain the end-of-path in addition to the preposition. We thus conclude that the final *durch* in (60b) expresses the end-of-path. This explains why (60f) is ungrammatical: there are two delimiters: the spatial extent and the end-of-path.

In (61)-(64), we illustrate other prepositions which can incorporate:

(61) a. er flog *über* den See hin*über*
he flew over the lake over

b. er *über*flog den See
er over-flew the lake

(62) a. er ist *um* die Stelle her*um*gefahren
he is around the place around-GE-driven

b. er hat die Stelle *um*fahren
he has the place around-driven

c. er hat ihn *um*gefahren
he has him down-GE-driven

(63) a. er wickelt den Schal *um* das Kind
he winds the scarf around the child

b. er hat das Kind mit dem Schal *um*wickelt
he has himself with the scarf around wound

(64) a. er hat den Dünger *unter*gegraben/ *unter* die Erde gegraben
he has the fertilizer under-GE-dug/under the soil dug

b. er hat die Gesellschaft *unter*graben
he has the society undermined

Now, these examples do not correspond completely to the pattern we have described for *durch*. These prepositions are not as productive in their incorporation process either. The differences can, however, easily be related to basic meaning of the prepositions: *durch* is the path preposition par excellence, only *durch* expresses traversal. *um ..herum* makes it possible to specify a surface too, the one included in the circle. *über* is a good path expression too.

Look whether the differences fall out from this explanation:
(61) and (62) are comparable to *durch*; (62c) is somewhat idiosyncratic: the unincorporated preposition *um* in (62c) (*er fuhr ihn um*) forms, together with the verb, an inherently delimited relation. (63a-b) is very much like the *spray-load* alternation and *be*-prefixation: importantly, in (63b) the child is covered by the scarf, to a greater extent than in (63a). (64)[18] exhibits several idiosyncrasies: there is no *doubling* of the preposition, it either heads the PP or occurs by itself; this may be related to the character of the relation: *graben* means penetration of the earth; it may however result from the preposition: *unter* is not very good for path expression: if path is to be expressed with *unter*, the preposition *durch* is used for the end-of-path:

[18]Concerning (62b), we may note that incorporated constructions often acquire a more idiosyncratic interpretation: *durchschauen* 'see through', *übersetzen* 'translate' ('set over'), *untergraben* 'undermine'. Still, the object can be interpreted as delimiting the event through spatial extent, as proposed by Tenny.

(65) a. er ging *unter* der Leiter *durch*
he went under the ladder through

b. die Autobahn führt *unter* der Straße *durch*
the highway leads under the street through

Incorporation seems to be limited to the prepositions illustrated here.[19] Not only the prepositions, but the relations too must be amenable to traversal, coverage. Importantly, however, incorporation is not restricted to motion verbs although they constitute the prototype of traversal. Cf. (61). To give one more example of the effect of incorporation:

(66) a. er hat sich *durch*gebettelt
'he has survived by begging

b. er hat das ganze Land durchbettelt
he has the whole country throughbegged

Thus, incorporation has the effect of selecting a spatial extent as the delimiter, the complex relation specifying the traversal:

(67) Path __ Motion Extent
Path __Activity Extent

We extend the explanation for the incorporation phenomena to *be-* since it selects the spatial extent of the object participant as the delimiter. In this sense, we reconcile the notion of total affectedness and spatial extent: the complex relation specifies a traversal, the object limiting this traversal.

This solution provides an explanation for the increased affectedness interpretations that may result from prefixation: if the object does not provide an extent or the relation is not easily associable with some notion of coverage, there will be no delimitedness. However, the specification of the prefix, for instance *be-* [+cover], will result in a more abstract 'coverage' of the object.

3.5. Summary.
Prefixation affects delimitedness: prefixes are either delimiters or they select a delimiting participant. Thus their behaviour parallels that of other delimiters, namely SC predicatives (*voll*) and particles (*hinaus*). Some prepositions do incorporate and select the spatial extent as delimiter. The difference between the incorporated and the unincorporated occurrence of the preposition is that unincorporated, they either have an end-of-path interpretation or they head a path PP. Incorporated, they express the path function and thereby select the spatial extent of a participant as delimiter.

[19] with the exception of *hinter* in *hintergehen* 'go behind someone's back'.

While this seems to be the distinction between the incorporated and the unincorporated prepositions (*durch, unter, über, um, hinter*), prefixes and other small clause predicates are dependent on the meaning contribution: if they refer to spatial extent, such as *be-* (COVER), the object participant will be the delimiter; if they express end-of-path, such as *ent-*(OUT OF), they are delimiters themselves, just as these complements are.

4. The operation.

Section 3 was devoted to the aspectual contribution of prefixes. In section 2. we discussed the relationship between delimitedness through spatial extent and the realization as DO, cf. the difference between *eat the apple* and *eat from the apple*. In the examples in 3, we see that except for the cases involving end-of-path, prefixation always induces transitivity.[20]This effect cannot be related to delimitedness directly, since it occurs even when the object cannot be interpreted as delimiting, or the event as delimited, cf. *jemanden* (acc) *beliefern* '*be*-deliver somebody', *jemanden* (acc) *verfolgen* 'pursue somebody'. In these cases, the result is increased involvment of the target participant which, however, can be deduced from the incomplete effect of the prefix due to properties of the object or the relation. Prefixation thus involves a complex but consistent interaction of syntactic and conceptual properties.

We will give a revised specification of the prefixes before illustrating the derivation at gestalt level.

4.1.Lexical specification of prefixes.

We propose some changes in the specification of the prefixes given in (55). In analogy with the prepositions that incorporate, marked [+path], we define *be-* as [+surface], expressing that it involves coverage. *Indirect delimiter* is interpreted as follows:

> element which selects the spatial extent or some other property of the direct object as the delimiter.

A predicative such as *voll* in (9) (*er schrieb die Seite voll* 'he wrote the page full') is thus an indirect delimiter rather than a non-delimiter (cf. 1.1.4. and below).

Naturally, if the object does not have the right properties, delimitedness will not be achieved. The feature '-const' (-constituent) expresses that the items are affixes, or dependent elements.

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[20]In the end-of-path cases without an object, the subject has object properties with respect to change of state, cf. Seibert, 1992.

(55')

be-: [+surface,+ind del, -const]
ver-: [+end-of-path, +del, -const]
zer- : [+result, +del, -const]
er-: [+result, +del, -const]
ent-: [+end-of-path, +del, -const]

In the following we illustrate some prefixation processes.

4.2. *Derivation.*

ent-: der Vogel flog aus dem Käfig - der Vogel entflog aus dem Käfig

	Gestalt	
	+telic	
	+transition	
	+criterial	
	:	
	+branching	
/	|	\
Arg1	**V**	**Pred**
	+transition	+criterial spell-out
:	+criterial	+ end-of-path
		+del
+subj		
|	|	|
er	flog	aus dem Kafig
he	flew	out of the cage

=>

Gestalt'
+telic
+transition
+criterial

:
+branching
/ | \ \

Arg	**PREF _____V**		**Pred**
	+end-of-path	+transition	+criterial spell-out
:	**±del**	+criterial	+ end-of-path
	-const		+elaboration
+subj			
|	|		|
er	entflog		aus dem Kafig
he	ent-flew		out of the cage

ver-: er jagte die Kühe aus dem Garten - er verjagte die Kühe aus dem Garten

Gestalt
+telic
+transition
+criterial

:
+branching

Arg1	**V**	**Arg2**	**Pred**
	+transition	+SPA	+criterial spell-out
:	+criterial	:	+ end-of-path
+subj		-subj	**±del**
|	|	|	|
er	jagte	die Kuhe	aus dem Garten
he	chased	the cows	out of the garden

=>

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Gestalt'
+telic
+transition
+criterial

:
+branching

Arg1	**PREF_____V**		*Arg2*	*Pred*
	+end-of-path	+transition	+SPA	**+crit. sp-out**
:	**±del**	+criterial	:	**+ end-of-path**
	-const		-subj	**+elaboration**
+subj				
er	verjagte		die Kühe	aus dem
he	ver-chased		the cows	out of the
garden				

be-: er baute ein Haus auf das Grundstück - er bebaute das Grundstück mit Wochenendhäusern

Gestalt
+telic
+transition
+criterial
:
+branching

Arg1	*V*	*Arg2*	*Pred*
	+criterial	+SPA	+place
:	+transition	**±del**	+crit. sp.-out
+subj		-subj	
er	baute	ein Haus	auf das Grundstück
he	built	a house	on the lot

=>

Gestalt'
+telic
+transition
+criterial
:
+branching

Arg	**PREF_____V**		**Arg2**	**Pred**
	+surface	+criterial	+SPA	
+material				
:	**+transition**	-transition	**±del**	**+elaboration**
	+ind del		(+extent)	
+subj	-const		subj	
|	|		|	|
er	**bebaute**		das Grundstück	**mit**
..häusern	he	be-built		the lot with
..houses				

er-: er schlug sie tot - er erschlug sie

Gestalt
+telic
+transition
+criterial
:
+branching
/ | \ \

Arg1	**V**	**Arg2**	**Pred**
	+criterial	+SPA	+result
:		:	**±del**
+subj		-subj	
|	|	|	|
er	schlug	die Fliege	tot
he	hit	the fly dead	

=>

Gestalt'
+telic
+transition
+criterial
:
+branching

/ | \

Arg1	**PREF_____V**		**Arg2**
	+result	+criterial	+SPA
	:	**+del**	
+subj	-const		-subj
|	|		|
er	er-schlug		die Fliege
he	er -hit		the fly

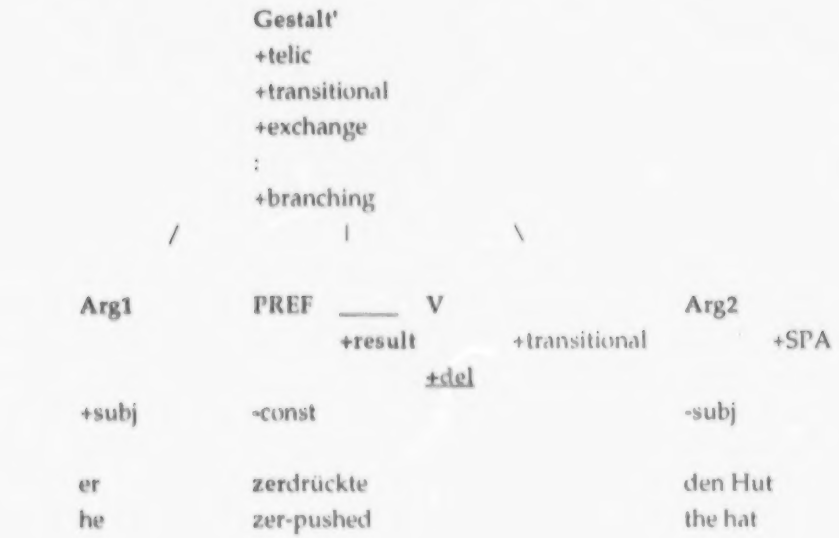
zer-: er drückte den Hut flach - er zerdrückte den Hut

Gestalt
+telic
+transitional
+exchange
:
+branching

/ | \ \

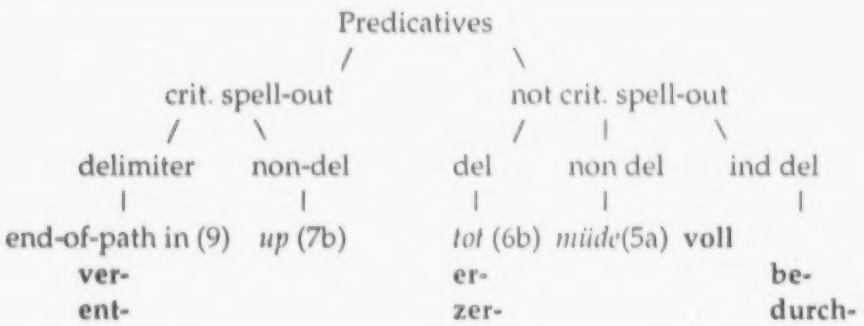
Arg1	**V**	**Arg2**	**Pred**
	+transitional	+SPA	+result
:		**+del**	
+subj		-subj	
|	|	|	|
er	drückte	den Hut	flach
he	pushed	the hat	flat

=>



4.3.Conclusion.

Prefixes take the predicative function. They are strong delimiters and demote previous delimiters according to their specification (cf. 1.1.4):



Thus, some prefixes are selected by the criteriality of V, while others are not-criterial spell-outs. End-of-path is the only expression that can serve as elaboration (others may appear only marginally). *be-*, which differs from the other prefixes in not being a direct delimiter, takes a complement expressing the material covering the surface.

There are many properties which have not been discussed yet, such as the fact that the prefixes make somewhat complementary meaning contributions: *ent-* and *be-* (especially in prefix-N combinations as in *entehren* 'dishonour'- *beehren* 'be-honour'), *er-* and *zer-* (expressing creation and destruction respectively), *ent-* and *ver-* (as in *enthüllen-verhüllen*), *er-* and *ver-* (as in *erklingen - verklingen*); there remain questions with respect to the many

idiosyncratic properties of the prefixed relations, and there are prefix-V/N combinations which are rather obscure (cf. Appendix). Furthermore, we will have to compare a syntactic analysis in terms of SC structure as proposed by Hoekstra (op. cit), Hoekstra & Mulder (op. cit.) to the one outlined here. However, considering the close interaction between conceptual, syntactic and morphological properties established in this paper, an analysis of prefixation, as has been demonstrated, has to involve specification at all these levels. Some effects are of a quite general character; by linking (properties of) the direct object to delimitedness, and prefixes to delimitedness through the lexical specification in (55'), we hope to have provided an adequate description of the effects of prefixation in German.

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APPENDIX:
The following is only a sample of *be*--stem combinations.

1. *be-* prefixation promotes a surface complement:

a. er malt Schlagworte auf die Wand
he paints slogans on the wall

b. er *be*malt die Wand mit Schlagworten
he be-paints the wall with slogans

bemalen 'be-paint', bedecken 'be-cover', bedrucken 'be-print', behauchen 'be-breathe', bekleckern 'be-spill', bekotzen 'be-vomit', bekleben 'be-glue', bepflanzen 'be-plant', bepacken 'be-pack', bereisen 'be-travel', berieseln, besäen 'be-sow', bescheinen 'be-shine', beschießen 'be-shoot', beschmieren 'be-smear', bewerfen 'be-throw', 'beschütten 'be-pour', besprühen 'be-sprinkle', bespritzen 'be-splash', besprenkeln 'be-sprinkle', besprengen 'be-sprinkle', besticken 'embroider', bestrahlen 'be-ray', bestreuen 'be-stray',

2. *be-* prefixes to a nominal root, with the interpretation: outfit/equip with, put on/over (the interpretation will be more abstract if the relation is):

a. er versah den Wagen mit Reifen
he outfit the car with tires

b. er bereifte den Wagen
he be-tire the car

bearbeiten 'be-work', beampeln 'be-light', bekreuzen 'be-cross', beachten 'be-respect', beerden 'be-earth', befruchten 'be-fruit', begraben 'be-grave', begrenzen 'be-border', begründen 'be-reason', begrüßen 'be-greeting', bejubeln 'be-rejoice', bekränzen 'be, bekleiden 'be-cloth', beklagen 'be-complain', belächeln 'be-smile', beleben 'be-life', belauben 'be-leaf', belasten 'be-load' , belehren 'be-teaching'* , beleuchten 'be-light'*, bemasten 'be-pole', benoten 'be-character', benummern 'be-number', bepflastern , beraten 'be-council', bepudern 'be-powder', bereifen 'be-tire', bereisen 'be-travel'* , bereuen 'be-, berenten 'be-interest', beringen 'be-ring', beschämen 'be-shame', beschatten 'be-shadow', beschildern 'be-sign', beschirmen 'be-umbrella', beschmutzen 'be-dirt', bekanten 'be-edge', beschriften 'be-writing', beschützen 'be-protection'*, beschuhen 'be-shoe', beseelen 'be-soul', besiegeln 'be-seal', besohlen 'be-sole',

*Possibly, this combination can be analyzed as prefix-V

besteuern 'be-tax', bestrafen 'be-punish', betiteln 'be-title', beurteilen 'be-verdict', beurlauben 'be-vacation', bewaffnen 'be-weapon', bewölken 'be-cloud', bezweifeln 'be-doubt', ...

3. *be*--adjective combinations:
bereichern 'be-rich', befreien 'be-free', ...

4. More obscure cases:

begeben 'go to', befreunden 'be-friend', begegnen 'meet', besagen 'be-say=mean', express', beschaffen 'be-manage=provide', beschädigen'be-damage', beschließen 'be-conclude=decide', beschwätzen be-chat', beschwören 'be-swear', besegeln 'be-sail', besetzen 'occupy', besingen 'be-sing', besiegen 'be-win', besprechen 'talk about', bestehen 'insist', bestechen 'bribe', bestreben 'aim', bestreiten 'be-argue ', betrachten 'contemplate', betragen 'amount', betreiben , bewegen 'move', beweisen 'demonstrate', bezeichnen 'designate', bewundern 'admire', bezahlen 'pay', beziehen 'get', beschenken 'offer'....

The Lexical Semantics of Ergative Verbs in German

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1.0. Introduction

In this paper I argue that the grammatical behaviour of ergative verbs in German is best explained by making reference to their semantic specification. As will be shown, ergative verbs in German are characterized by expressing a transition, resulting in the specification of the single argument as +affected, to be defined below. The grammatical behaviour of ergative verbs, as it reveals itself in particular through the choice of *sein* 'to be' as auxiliary and the occurrence of the past participle in the prenominal position, can be traced back to these verbs expressing a transition. As a result of this, I propose that, in German, there is no evidence for an analysis of ergative verbs along the syntactic lines proposed by Perlmutter (1978) and Burzio (1986).

1.1. Ergative verbs

The differentiation of two classes of intransitive verbs along syntactic lines was first proposed by Perlmutter (1978), stating in terms of Relational Grammar that there are intransitive clauses that have an initial 2 (direct object), but no initial 1 (subject), a hypothesis since known as the *Unaccusative Hypothesis*, due to the inability of these verbs to assign the accusative case. Burzio (1986), based on work done in Italian, translated the Unaccusative Hypothesis into GB-grammar, and formulated the Ergative Hypothesis, according to which there are two classes of intransitive verbs: the class of ergative verbs, which has its single argument in d-structure object position, and the class of unergative verbs, which has its single argument in d-structure subject position. Accordingly, the two classes have the following d-structural representation:

(1) a. unergative verbs: NP V
b. ergative verbs: [e] V NP

According to Grewendorf (1989), Haider (1985) and Abraham (1986), the most prominent differences among intransitive verbs in German are the choice of auxiliary and the possibility of the past participle to occur in prenominal position. With respect to this, unergative and ergative verbs pattern as in (2) and (3), respectively:

(2) a. *Der Mann *ist/hat geblutet.*
The man is/has bled.

b. **Der geblutete Mann*
The bled man

(3) a. *Der Mann ist /*hat verblutet.*
The man is/has bled to death.

b. *Der verblutete Mann*
The to death bled man

The selection of *sein* 'to be' as auxiliary, and the possibility of an intransitive verb's past participle to occur in prenominal position have both been related to the absence of a theta marked subject, (see Grewendorf (1989)), and as a consequence of this, verbs that display the behaviour illustrated in (3) are classified as ergative verbs.

As can be seen from (2) and (3), a prefix may have the effect of turning an intransitive verb that is unergative into an ergative verb, cf. ergative ***erblühen*** 'to burst into blossom', *verblühen* 'to go out of blossom' versus unergative *blühen* 'to be in bloom'; ergative ***anbrennen*** 'get burnt', *verbrennen* 'burn up' versus unergative *brennen* 'to burn'; ergative *verkochen* 'to boil away', *überkochen* 'to boil over' versus unergative *kochen* 'to boil'. In all these cases, the ergative variants display the behaviour described in (3a-b).

A similar phenomenon can be observed with some verbs expressing motion: a verb like *schwimmen* 'to swim', *reiten* 'to ride' or *segeln* 'to sail' must choose *sein* as auxiliary and will allow the prenominal use of the past participle if a goal adverbial is added:

(4) a. *Der Mann ist/*hat über den See geschwommen.*
The man is/has across the lake swum.

b. *Der über den See geschwommene Mann.*
The across the lake swum man.

However, in the absence of a goal or directional adverbial the choice of auxiliary is facultative:

(5) *Der Mann ist/hat geschwommen.*
The man is/has swum.

and the prenominal use of the past participle is only grammatical in the presence of an adverbial expressing a goal, as (6) shows, the presence of an

adverbial expressing a direction where no endpoint is specified does not result in a grammatical construction:

(6) **Der am Ufer entlang geschwommene Mann*
The at the shore along swum man

In summarizing these characteristics, one can say that ergative verbs in German are characterized by two striking factors that must be acknowledged and accounted for: the frequent appearance of "ergativizing" prefixes and the diversity in the behaviour of some motion verbs. The fact that ergative behaviour occurs sometimes only as the result of the presence of an adverbial or a prefix, indicates that ergativity in these cases is triggered by the semantic information that they introduce. Pursuing this line of thought leads to the question whether ergativity is triggered by semantics only in these cases, or always. A related issue is then whether some of the constructions that typically occur with ergatives and that are used as tests in determining the status of an intransitive verb as ergative or unergative, are a reflex of the semantic characterization of the verb, or whether they are a reflex of the argument being in object position, or perhaps both. However, if these constructions that are used as tests for ergativity can be shown to be related to semantic properties of the verb alone, then no justification for the EH is left, and as a consequence of this, one would have to conclude that the argument is in subject position after all, also in deep structure.

Bearing these considerations in mind, I will now examine several grammatical constructions that have been used as ergative tests for German, but also for other languages, such as Norwegian, Dutch and English.

2. Ergative tests in German

2.0. Introduction

So far, I have only mentioned two grammatical constructions used as tests for ergativity in German, namely the selection of *sein* as auxiliary, and the prenominal occurrence of the past participle. In the following, a closer look will be taken at these tests as well as others, used as ergative diagnostics. In particular two aspects will be examined:

1) Are they really useful in determining the status of a verb as being ergative or unergative in the syntactic sense, i.e. as having its single argument in object position?

2) Do they single out one uniform group of verbs, or do the groups that are singled out by the respective tests overlap?

Some of the ergative diagnostics that will be discussed here are taken from Haider (1985), Abraham (1985) and Grewendorf (1989). I am also going to discuss resultatives, which were related to the phenomenon of ergativity by Simpson (1983).

2.1. Auxiliary selection: *sein* versus *haben*

Burzio (1986) argues in his study of intransitive verbs in Italian, that verbs that select *essere* 'to be' as auxiliary are ergative, i.e. have a d-structure object. This assumption is in particular supported by the clitisization of *ne*, a clitic that has object reference, which usually coincides with the choice of *essere* as auxiliary.

As I have already pointed out, intransitive verbs in German also select either *haben* or *sein* as auxiliary which has led Grewendorf (1989) and others to the assumption that verbs selecting *sein* as auxiliary should be analyzed as ergative, i.e. as having an argument that originates in d-structure object position.

However, there are certain difficulities with the postulation that the choice of *sein* as auxiliary indicates that the NP in question is in d-structure object position. First, it is assumed that the argument of an ergative verb moves to the subject position because the verb cannot assign accusative case. If one takes auxiliary selection as a test for ergativity seriously, then one would predict that no accusative object can occur with a verb that selects *sein* as auxiliary, since ergativity also means that the verb cannot assign case to an object. However, as the following examples, taken from Grewendorf (1989) illustrate, this is not the case:

(7) *Ich bin die Arbeit durchgegangen.*
I am the work$_{acc}$ gone through.
(I have gone through the work)

(8) *Er ist den Bund fürs Leben eingegangen.*
He is the bond$_{acc}$ for life gone in.
(He has married)

(9) *Er ist die ganze Stadt abgelaufen.*
He is the whole town$_{acc}$ run through.
(He has gone through the whole town)

(10) *Sie ist ihn angegangen.*
She is him$_{acc}$ approached.
(She has approached him)

Second, as I have pointed out in 1.1. above, ergative behaviour, as reflected by the choice of *sein* as auxiliary and the prenominal use of the past participle, may be triggered by the addition of an adverbial or a prefix:

(11) a. *Er ist/hat geschwommen.*
He has/is swum.

b. *Er ist/*hat über den großen See geschwommen.*
He is/has across the big lake swum.

c. *Er ist/*hat am Ufer entlang geschwommen.*
He is/has at the shore along swum.

Assuming that the selection of *sein* as auxiliary is triggered by a non theta subject position, leads in this case to the postulation of two different representations for the same verb: in the presence of any adverbial expressing a change of location (regardless of whether the motion is understood to have reached an endpoint or not, compare (11b) and (11c)), the verb's subject position is empty; if no such adverbial is present, the verb has either a d-structure object or a d-structure subject. What is left unexplained is the connection between a verb's theta frame and the presence versus absence of an adverbial expressing a change of location, i.e. why should a verb only have a subject as long as no directional adverbial is present?

For these reasons, I assume that a semantic component is added by the adverbial which is responsible for the change in auxiliary selection. This semantic component is that of transition, either completed or not completed. Transition involves a change in an entity whereafter this same entity is characterized as +affected. Through this change a situation emerges, distinct from and replacing an earlier situation, where this same entity takes part. The new situation is referred to as the result of the transition. The transition may be inherent to the meaning of the verb or it may be added to it by morphological changes, such as prefixation, or the addition of an adverbial. Thus, transition is understood to be a feature that pertains to the construction as a whole, and not to parts of it. In the examples (11b-c) above, a transition obtains with respect to spatial location. Typically, transition will either affect space relatedness or it will affect one particular property or characteristic, as in ergative *erröten* 'to blush', where the transition consists of the color change occurring in one particular body part, here the face. This kind of change may also occur in a more holistic manner, as in *altern* 'to age' or *sterben* 'to die'. The connection between the choice of auxiliary and transition can be further illustrated with intransitive *kochen* 'boil', a verb that usually has *haben* as auxiliary, as in (12), but may have *sein* as auxiliary, as in (13), however, the occurrence of *sein* signals that a transition has occurred:

(12) *Der Reis hat gekocht.*
The rice has boilt.

(13) *Der Reis ist gekocht.*
The rice is boilt.

In (13), the rice has finished boiling in the sense of being cooked i.e. ready to eat. *kochen* also has a variant with the prefix *ver-*, namely *verkochen*:

(14) *Das Gemüse ist verkocht.*
The vegetables is boilt away.

Here also a transition is understood to take place in the sense of boiling to the point where whatever is being boilt loses all its substance.

The facts as presented so far indicate that the choice of *sein* as auxiliary is essentially triggered by the presence of a transitional component. As will be shown in the following the other grammatical construction that is characteristic for the behaviour of ergative verbs, namely prenominal past participles, can also be accounted for by making reference to the semantic notion of transition.

2.2. The prenominal use of the past participle

With transitive verbs in German, the past participle always has reference to the object, never to the subject. This has been observed by Haider (1985) and Abraham (1986), and can be illustrated by (15a-c):

(15) a. *Der Barbier rasiert den Mann.*
The barber shaves the man.

b. *Der rasierte Mann*
The shaven man

c. **Der rasierte Barbier*
The shaven barber (who has shaved in (15a))

It has been assumed, (Burzio (1986), Hoekstra (1984), Haider (1984), Kayne (1985), and Grewendorf (1989)), that the reason for the object orientedness of the past participle in its prenominal use resides in the absorption of the subject theta role taking place whenever a past participle is formed. This predicts that in the presence of one theta role as is the case with intransitive verbs, the adjectival use of the past participle will result in an ungrammatical construction, as is indeed the case:

(16) **Der geblutete Mann*
The bled man

Following this line of reasoning, prenominal past participles formed from ergative verbs are possible since no absorption of the subject theta role has occurred (since there is none to absorb):

(17) *Der ertrunkene Mann lag auf dem Strand.*
The drowned man lay on the beach.

As a consequence of this analysis, the possibility of a verb to form a prenominal past participle has been accepted as a test for ergativity.

However, as the following examples show, the prenominal use of the past participle is not always possible with verbs that are generally considered ergative by at least one standard ergative test, namely the selection of *sein* as auxiliary. An example of this is given in (18):

(18) **Das gefallene Kind*
The fallen child

Although *fallen* selects *sein*, it does not occur as readily in prenominal position as past participles formed form other ergative verbs such as *verbluten* or *verkochen*[1]. In order to occur in this kind of construction the addition of a prefix or of an adverbial specifying the endpoint of the transition, is required as (19a-b) illustrates:

(19) a. *Das auf den Boden gefallene Kind*
The onto the ground fallen child

b. *Das hingefallene Kind*
The down fallen child

The same is true for motion verbs such as *schwimmen*:

(20) a. *Der über den See geschwommene Mann*
The across the lake swum man

b. **Der am Ufer entlang geschwommene Mann*
The at the shore along swum man

---

[1] *fallen* can only form a prenominal past particple in the metaphoric interpretation, as in *das gefallene Mädchen* 'the fallen girl' meaning 'a girl fallen into dishonour'.

Also, it is not the case that all transitive verbs allow the prenominal use of the past participle, which suggests that more is involved than mere objecthood:

(21) **Das bekommene Geld*
The gotten money

The contrast between (18) and (19), (20a) and (20b), as well as the ungrammaticality of (21) suggest that the mere absence of a subject theta role, as is supposed to be the case with ergative verbs, does not suffice to allow for the prenominal use of the past participle. Also, they show that the semantic characterization of the past participle contributes to the possibility of it occurring in prenominal position. Based on these examples, I propose that the possibility of using the past participle of an intransitive verb in prenominal position is only possible as long as a transition is expressed that is completed, in the sense of having an endpoint.

Thus, the two most prominent characteristics of ergative verbs in German, namely the choice of *sein* as auxiliary and the prenominal occurrence of the past participle are both triggered by the presence of a transitional component in the semantic specification of the verb. In the case of the prenominal past participle there is an additional requirement that the transition be completed.

The differentiation of two classes of intransitive verbs based on the semantic feature of transition, as proposed here, is not entirely new. As has been noted by Haider (1985) and Grewendorf (1989), "generalizations" of this type can be found in traditional grammars. Thus, (Paul (1916), Vol. IV, paragraph 359), imperfective verbs are said to form their present perfect tense with *haben*, while perfective verbs form their present perfect tense with *sein*.

The analysis proposed here, has been rejected by Grewendorf and Haider due to its apparent inconsistence. As Haider (1985) notes, verbs such as *aufhören* 'stop', *beginnen* 'begin', *besteigen* 'to climb' and *zunehmen* 'to put on something, to gain' do not select *sein* as auxiliary, although they apparently express a transition. However, it appears to me that these verbs should not be construed as verbs expressing a transition. In (22):

(22) *Der Film hat um 11 Uhr aufgehört/begonnen.*
The film has at 11 o'clock ended/started.

aufhören and *beginnen* express the localization of an event's endpoints, final and initial, on a temporal scale, rather than expressing a transition. In neither case is the film actually understood to undergo a transition in the sense of passing out of or coming into existence, changing location or changing with respect to one of its characteristics. Instead, (22) expresses an event, here the film, and *aufhören* and *beginnen* specify respectively the final and initial endpoint of this event on a temporal scale. With *zunehmen* 'to put on something' the case is somewhat

different, since here a transition can clearly be argued to take place. Thus, in (23), there can be no doubt that 'the man' undergoes a transition in the sense of becoming bigger:

(23) *Der Mann hat fünf Kilo zugenommen.*
The man has five kilos put on.

However, *zunehmen* does not express a transition on behalf of the subject argument. In a construction like (23), the understanding of a transition taking place is a consequence of the 'five kilos' piling up on the person. However, it is not this transition, but rather "the piling up" or the addition of something, in this case the weight, that the verb expresses. That, as a consequence of this, a transition takes place, is not part of the verb's meaning.

Haider (1985) also notes that the selection of the auxiliary can not be triggered by the expression of a transition since there are constructions of the type exemplified in (24a-b), that are apparently synonymous but still select different auxiliaries:

(24) a. *Er ist auf den Berg gestiegen.*
He is on the mountain climbed.

b. *Der Mann *ist/hat den Berg bestiegen.*
The man is/has the mountain be-climbed.

Contrary to appearance, the diffent choice of auxiliary is the result of a difference in meaning, Thus, while *auf den Berg steigen* 'climb on the mountain' simply expresses a change of location, the construction in (24b) expresses that the mountain has been affected in the sense of having been climbed on by the man in its total length. Thus, while the sentence in (24a) focusses on the transition of the man with respect to his location, the sentence in (24b) focusses on the affectedness of the mountain rather than the affectedness of the man. This difference is also reflected in the choice of auxiliary. Similarly, transition is expressed with respect to the spatial location of the subject argument in *begegnen* 'meet, run into', which, as one would expect, takes *sein* as auxiliary:

(25) *Er ist ihr auf dem Flur begegnet.*
He is her$_{dat}$ on the corridor met.

begegnen contrasts with *treffen* which means roughly the same, namely 'meet', but which takes *haben* as auxiliary and an accusative object. The different choice of auxiliary can however be attributed to a difference in meaning: while *begegnen* means that there is motion on behalf of the referent of the subject, e.g. 'he' meeting 'her' while walking down the road, this is not the case with a verb like *treffen*: here the meeting may have occurred while for example queueing

up, or while sitting in a cafe or in a number of other situations where no motion is involved or construed to be involved.

Other verbs that have been quoted as counterevidence to the analysis proposed here is the selection of *sein* as auxiliary by *bleiben* 'remain' and *sein*. Clearly, *bleiben* does not express a transition, but a negated transition. To remain in a place means basically not to undergo a transition with respect to one's spatial location. Thus, although the transition is negated, it is still present in the lexical specification of the verb and as a consequence of this, *sein* is selected as auxiliary.

The question that remains, is then why *sein* itself also selects *sein* as auxiliary. Clearly, *sein* differs from ergative verbs since it does not express a transition; instead, it typically occurs with predicatives. A possible solution to this problem may lie in the predicative like nature of past participles formed by ergative verbs, which is achieved through the transition that these verbs express. The transition that is expressed by ergative verbs is, although not in the aspectual sense, but in a temporal sense, understood to be completed when the past participle is formed. Thereby, past participles aquire a predicative like interpretation, partly reflected by the choice of *sein* as auxiliary.

2.3. The topicalization of subject + past participle

Haider (1985) gives a short overview over ergative verbs in German and observes that only the object of a transitive verb can be topicalized together with the past participle, never the subject. This is illustrated by (26a-c):

(26) a. *Dieser Mann hat einen Fehler gemacht.*
This man$_{nom}$ has a mistake$_{acc}$ made.

b. *Einen Fehler gemacht hat dieser Mann.*
A mistake$_{acc}$ made has this man$_{nom}$.

c. **Dieser Mann gemacht hat einen Fehler.*
This man$_{nom}$ made has a mistake$_{acc}$.

The grammaticality of (26b) versus the ungrammaticality of (26c) suggests that topicalization of an NP together with the past participle is sensitive to the function of an NP as object. Ergative verbs seem to allow constructions where the NP is topicalized with the participle, while this does not seem to be the case with unergative verbs. This can be illustrated by the following examples taken from Haider (1985), bearing his grammaticality markings:

(27) *?Boote gesunken sind hier noch nie.*
Boats sunk are here yet never.

'Boats have never sunk here so far'

(28) **Linguisten gewohnt haben hier noch nie.*
Linguists lived have here so far never.

It has been assumed that the topicalization of the object NP in (26b) is possible because the object is dominated by the same node as the verb. Thus, they form one constituent, and it is this constituent that is moved to the Vorfeld (CP SPEC) in (26b). Accordingly, the NP in (27) is assumed to be inside the VP where it forms one constituent with the verb, while this is not the case in (28)[2].

However, as the following examples show, the topicalization test is only straightforward with objects of transitive verbs. With intransitive verbs the judgement of native speakers concerning the grammaticality of a topicalized NP + past participle sequence is uncertain, and, most importantly, is not reliable in seperating between the two verb classes in any consistent manner[3]. This is illustrated by the following example[4]:

(29) *Ein Außenseiter gewonnen hat hier noch nie.*
An outsider won has here so far never.

gewinnen 'win' is unergative if one looks at standard ergative diagnostics such as auxiliary selection and the prenominal use of the past participle:

(30) a. *Ein Außenseiter hat / * ist gewonnen.*
An outsider has/is won.

b. **Der gewonnene Außenseiter*
The won outsider

As we can see in (29), NPs that are not in object position, at least by virtue of standard tests that are meant to reveal the syntactic position of an argument, may topicalize with the past participle. Consequently, we have to conclude that topicalization with the past participle cannot function as a test for ergativity.

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[2] Grewendorf (1989) points out that a case theoretical problem has been overlooked by saying that topicalization of subject+participle sequences are possible because the NP is inside the VP at d-structure, since this basically means that it needs to have received its nominative case marking at d-structure as well. This is however not possible because nominative and accusative case are assigned at s-structure. Therefore, Grewendorf concludes that the argument of an intransitive verb may optionally remain in object position even at s-structure.

[3] There is no significant difference in grammaticality between ergative verbs and unergative verbs regarding constructions involving the topicalization of the subject together with the past participle.

[4] I owe this example to Haider p.c.

2.4. Impersonal Passive

Grewendorf (1989) states that ergative verbs cannot take the passive voice. It is well known that German intransitive verbs, unlike their English counterparts, can form a passive, called the impersonal passive:

(31) *Es wurde getanzt/gearbeitet.*
It was danced / worked.

The deleted subject theta role can be picked up again by a *von* 'by' -phrase, as (32) illustrates:

(32) *Es wurde von Peter getanzt.*
It was by Peter danced.

Verbs that are usually considered to be ergative cannot form an impersonal passive, as has been repeatedly observed:

(33) **Es wurde (*von der Maria) angekommen/gewachsen/gefallen.*
It was by Maria arrived / grown / fallen .

Grewendorf (1989:21) explains the exclusive occurrence of unergative passives by assuming that the impersonal passive construction, as any passive construction, absorbs the subject theta role. In the case of ergative verbs however, there is no subject theta role that can be absorbed, which leads to the ungrammatical construction of the impersonal passive. Clearly, the fact that verbs that are classified as ergative by the ergative tests do not occur in passive constructions can be construed as support for the EH, if the explanation of the impersonal passive is based on the deletion of the subject theta role, i.e. a role identified as the one being carried by the subject, thus a role being dependent on something occurring in subject position. Such an explanation, however, does not account for the ungrammaticality of the following examples:

(34) **Es wurde (*von dem Bild) an der Wand gehangen.*
It was by the picture at the wall hung.

(35) **Es wurde (*von Peters Händen) gezittert.*
It was by Peter's hands shivered

Hängen (to hang) as well as *zittern* 'to shiver' are both verbs that would be classified as unergative, they both select *haben* as auxiliary and neither allows the attributive use of the past participle. Thus, they should be able to occur in the impersonal passive, since they have a subject theta role that can be deleted.

The ungrammaticality of these examples indicate that more is involved than just the deletion of a subject theta role. Moreover, it has been pointed out, (Zaenen (1988)), that there are some ergative verbs in Dutch that allow the impersonal passive. An example of this is given in (36) below, here translated into German, where the example has the same well formed status:

(36) *Es wurde von dem Schauspieler im richtigen Moment gefallen.*
There was by the actor in the right moment fallen.

Also, some motion verbs may appear in the passive voice, even if a directional adverbial is present, which is supposed to trigger a loss of subject theta role[5]:

(37) *Es wurde am Ufer entlang geschwommen.*
It was by the shore along swum.

(38) *Es wurde über den See geschwommen.*
It was across the lake swum.

(39) *Es wurde quer durch den Saal getanzt.*
It was across the hall danced.

Zaenen argues that the acceptability of passivization is determined by protagonist control, and that the acceptability of (36) is due to the control of the single argument. Control alone, however, is not enough to account for passivization in light of (40):

(40) *Das Kind wurde von den Wellen niedergeschlagen.*
The child was by the waves hit down.

The grammaticality of (40) and the example in (36) given by Zaenen, suggest that passivization requires that the argument that is deleted is either controlling or a force (possibly similar to the typical definition of agent). In any case it is clear that a particular semantic specification is required if passivization is to occur. It is important to keep in mind that this is in principle not incompatible with Grewendorf's assumption that the impersonal passive deletes the subject theta role. From the data presented so far it appears that the impersonal passive can only occur if the subject theta role that is to be deleted is controlling or, put in more traditional terms, if it is agentive. This view is also supported by Wunderlich (1985), who notes that passive formation is not possible with all transitive verbs either. In his analysis the passive rule requires that the subject argument have the agent role, and its absence is held to trigger the ungrammaticality of (41):

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[5] The examples sound a little stiff, but are not ungrammatical or even odd.

(41) **Der Brief wurde von Theo bekommen.*
The letter was by Theo gotten.

Given that there are other theta roles a subject may have apart from the agent role, this means that impersonal passivization will only affect a fraction of all possibly conceivable subjects. Thus, rather than stating that the impersonal passive rule deletes the subject theta role, it appears that it deletes a particular subject theta role, traditionally called the agent role characterized by being controlling. And from this, it follows that the impersonal passive cannot be used as an ergative test, since it only singles out one particular set of subjects.

2.5. Agent nominal derivation

Haider (1985), Grewendorf (1989), Abraham (1986) and others have proposed agent nominal derivation as a diagnostic for ergativity. This is considered to be a diagnostic for other languages such as English as well. As has been noted by Abraham (1986), verbs that are classified as ergative by the ergative tests introduced so far, do not allow the derivation of an agent nominal:

(42) **Ankommer , *Sinker*
Arriver , Sinker

However, there are also unergative verbs that do not allow the derivation of an agent nominal:

(43) *Wohner, Schwitzer
Liver, Schwitzer

Also, there are ergative verbs that occur in *-er* nominalizations, as (44) shows:

(44) *Der Frühaufsteher, der Ausreisser, der Nachfolger, der Aufsteiger*
the early bird, the escaped prisoner, the successor, the upriser

The nominalizations in (44) are all derived from ergative verbs, i.e they all select *sein* as auxiliary and they all allow the prenominal use of the past participle. I therefore conclude that *-er* nominalizations do not provide evidence for the EH.

2.6. Resultative Constructions

Simpson (1983), Grimshaw (1987) and Levin and Rappaport (1992) argue that resultative constructions provide further evidence for the EH. When transitive verbs form resultative constructions as in (45):

(45) *Sie wusch ihr Auto sauber.*
She washed her car clean.

the resultative predicative will always be predicated of the object, never the subject. Thus, in (45) there is no understanding of the resultative 'clean' being predicated of the subject 'she', the resultative must be understood as being predicated of the object 'the car', a fact which has ultimately resulted in the use of resultative constructions as a test for ergativity.

As has been noted by Levin and Rappaport (1992), ergative verbs do not insert a fake reflexive when they occur with resultative predicatives:

(46) **Sie fiel sich hinunter.*
She fell herself down.

Instead, these verbs must occur without the reflexive when they appear with a resultative predicative, as in (47):

(47) *Sie fiel hinunter.*
She fell down.

However, this is not the case with unergative verbs:

(48) *Sie schrie sich heiser.*
She screamed herself hoarse.

Verbs that are considered unergative such as 'scream', will require an object when they occur with a resultative predicative, as the ungrammaticality of (49) illustrates:

(49) **Sie schrie heiser.*
She screamed hoarse.

The obligatory insertion of a fake reflexive that can be observed with unergative verbs has been used as further support for the assumption that resultative predicatives can only be predicated of objects.

The contrast between (47) and (48) has led to the conclusion that the NP 'sie' in (48) is in subject position, and therefore requires an object that the predicative can be predicated of. This object is supplied in the form of a fake reflexive. In contrast to (48), the NP in (47) is already in object position, and therefore does not require a fake reflexive in object position. And for that reason, (46) is out because the object position is already taken. This line of argumentation has also been taken to account for (50), where no object insertion

is required for the resultative predicative 'out of prison', which has confirmed the view that the s-structure subject in (50) is actually a d-structure object[6]:

(50) *Er schwamm aus dem Gefängnis.*
He swam out of the prison.

However, it does not explain the obligatory insertion of a reflexive in (51), which could refer to an event where by, say, winning a swimming competition, the person, as a prize, is released from prison:

(51) *Er hat sich aus dem Gefängnis geschwommen.*
He has REFL out of the prison swum.

Also, verbs of motion, such as *laufen* and *rennen* which are typically considered ergative due to their more consistent choice of *sein* as auxiliary[7], do occur with resultative small clauses:

(52) *Er rannte sich müde.*
He ran REFL tired.

This is however not the case with other ergative verbs:

(53) **Sie fiel sich grün und blau.*
She fell REFL green and blue.

(54) **Die Suppe verkochte sich aus dem Topf.*
The soup away boiled REFL out of the casserole.

This suggests that *rennen* 'run', a verb that is always ergative, i.e. it does not display the same kind of variety in its behaviour with respect to the choice of auxiliary as for example *schwimmen* does, has properties that allow it to occur with a resultative small clause, and that these are properties that are not shared by most of the other ergative verbs.
The data as presented so far give rise to two questions:

1) Why are resultative predicatives always predicated of objects if the verb is transitive?

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[6] Further support for this view is taken from auxiliary selection: as mentioned, verbs of motion select *sein* as auxiliary in the presence of a directional adverbial.

[7] *rennen* and *laufen* only occur with *haben* in sentences like *Er hat/ist einen Rekord gelaufen* 'He has/is run a record'. In these cases, either auxiliary may be chosen. This is not in disagreement with my proposal. If *sein* is chosen as auxiliary, the meaning can be described as having traversed a particular distance by running (making fast leg movements) in recordtime; when *haben* is chosen, in contrast, there is no focus on spatial movement, but rather on having set a record by running. The 'traversing of a distance' is ignored.

2) What requirements have to be met for a resultative small clause to occur, i.e. why is (52) possible but not (53) and (54)?

An example of a transitive verb occurring with a resultative predicative was given in (45), here repeated:

(45) *Sie wusch ihr Auto sauber.*
She washed her car clean.

In (45), the subject is semantically characterized as being affecting in the sense of causing a change in an item in its surrounding, here the car. It seems therefore reasonable to postulate that the NP 'the car' is characterized as being +affected, in the sense of being the item undergoing the change, while the subject, here 'she', is characterized as +affecting. For an item to be affected means that it undergoes a transition, which results in a change in the item. Generally speaking, affecting items are characterized as items that bring about a change in their surrounding. Typically, an item will be +affecting if it is colored, to be more specifically defined below. Also, an item will be characterized as being +affecting if it is controlling. An item is controlling if it has the potential of bringing the situation it participates in to an end.

Since resultative predicatives denote features or characteristics that obtain after an item has undergone a transition, i.e. has become affected, I assume that resultative predicatives can only be predicated of affected items. In the construction (45), it is the car that is the affected item, and subsequently the resultative predicative takes it as its predication subject. In constructions involving transitive verbs, the only affected argument is the argument that is realized in object position, and for this reason resultative predicatives are always predicated of objects. Furthermore, there seems to be a requirement that an argument cannot be specified as +affecting and +affected simultanously. Thus, there is no understanding of (45) where both subject and object are affected.

The specification of the argument of an intransitive verb will depend largely on factors that are either inherent to the verb's meaning or introduced by other means such as adverbials or prefixes. Thus, the argument of an intransitive verb may be specified inherently as +affected as is the case with the verb 'fall'. In this case the verb expresses a movement downward, which is understood to affect the item in the sense of changing its location. 'fall' differs from verbs like 'swim' in that it only expresses one aspect of meaning, namely the aspect of moving downward. Nothing else on behalf of the item undergoing this change is expressed. A verb like 'swim' however has, in addition to expressing a change of location as 'fall', an additional aspect of meaning expressed, namely that of making certain movements with legs and arms in water.

Thus, the difference between a verb like 'fall' and a verb like 'swim' is that the latter imposes two different conditions on its argument, one being that of

moving through space, which is the same type of condition that 'fall' imposes on its argument and the other being of a general requirement concerning the behaviour of the argument. That a verb imposes certain conditions on its arguments means that this verb is *criterial*, a notion taken from Hellan and Vulchanova-Dimitrova (forthcoming). The nature of the conditions that a verb imposes on its argument is differentiated along three lines: coloring, space relatedness and existence. A verb colors its argument if the argument has to have certain properties or types of behaviour. This is for example the case in a construction like "John runs" where "John" has to make certain movements with his legs if the sentence is to count as an instantiation of running. In this sense, "John" is "colored" by the verb.

Space relatedness divides into three subparts: *location, spatial fit* and *orientation*. Basically location and spatial fit are the same in that both take the spatial coordinates of the argument as the criterial factor. The main difference however is that with location the landmark by which the spatial coordinates are expressed is less close to the argument than is the case with posture. An example for spatial fit is "John sits on the chair" since there is direct contact between the chair and John. An example of spatial location would be the sentence "John fell into the pit", a construction not qualified for spatial fit since there is no direct contact between the pit and John. Orientation can be exemplified by "The temple faced east". Another form of criteriality is existence where the criterial factor pertains to coming into or passing out of existence. The former is a case of actualization and the latter a case of annihalizaton.

For all types of criteriality there are ways beyond the verb itself of expressing as to how, where and to what extent the criteria apply. Usually this is expressed by the verb itself, but it can also be further specified by an adverbial. This kind of specification is called a *criterial spell out*, and can be illustrated by the sentence "John fell into the pit", where "into the pit" is a specification of where the criterion of moving downward was fulfilled. "Into the pit" counts therefore as a criterial spell out.

The verb "swim" is criterial with respect to space relatedness, since there is a movement through space, as well as with respect to coloring, since one has to make certain movements with legs and arms so as to qualify for swimming. Thus, in a construction like (50), here repeated:

(50) *Er schwamm aus dem Gefängnis.*
He swam out of the prison.

the adverbial 'out of the prison' functions as a criterial spell out with respect to the space relatedness of the argument. The addition of the resultative predicative 'out of prison' triggers the specification of the argument as +affected, since it expresses a change of location on behalf of the argument.

The resultative predicative *aus dem Gefängnis* 'out of prison' in (51) in contrast, here repeated:

(51) *Er schwamm sich aus dem Gefängnis.*
He swam himself out of the prison.

is not a criterial spell out but specifies a result that is external to the criteriality of the verb. As already mentioned, the adverbial does not denote a place the subject reaches as a natural result of swimming, i.e. the person might have been swimming in a completely different place, or the person may have never left the prison while actually swimming. Two different situations come to expression in (51), the first situation carried by the subject and the verb expressing the event of swimming, leading to the second situation which is carried by the small clause, expressing the "being out of prison", which is understood to occur as a result of the activity expressed by the verb. These two situations are represented as independent units, as can be seen by the resultative small clause. The question that remains is when one can expect to find a construction which expresses two situations, where the event expressed by the first situation leads to the second situation. My proposal is that (51) is possible due to the criteriality of the verb 'swim', being coloring, in the sense of demanding a certain type of behaviour. Thus, the occurrence of a resultative small clause as in (51) presupposes a subject argument that is affecting in the sense of being colored, i.e. engaged in a certain type of behaviour, or controlling, or both.

Constructions of the type exemplified in (51), i.e. with a reflexive, do not occur with ergative verbs due to the criteriality of ergative verbs. Mostly, these verbs do not color their arguments in the sense of demanding a certain kind of behaviour, but express only one aspect of meaning, as is the case with for example *fallen* 'fall', where a movement downward is expressed. Thus, the ungrammaticality of (46), here repeated:

(46) **Sie fiel sich hinunter.*
She fell REFL down.

is the result of the reflexive suggesting that the adverbial *hinunter* 'down', expresses a result that is external to the criteriality of the verb. This however is not possible since *fallen* 'fall', does not have the additional aspect of coloring in its semantic specification that is required for such a criteriality external result to occur. For this reason, (46) is out.

However, a verb like *fallen* could occur with a reflexive, if the event of falling would take place under control, as is the case in (55):

(55) *Man fällt sich immer warm vor einer Judostunde.*
One falls REFL always warm before a judolesson.

The possibility of a verb to occur with a resultative small clause, will therefore depend largely as to what extent the verb expresses coloring in the sense of demanding that its argument be engaged in a certain type of behaviour, or be controlling, as in (55). For this reason, ergative verbs will usually not occur with resultative small clauses. Those that do, namely motion verbs, have the semantic specification of coloring required for the occurrence of resultative small clauses. In some sense, motion verbs seem to present counterevidence to the postulation that an item cannot be specified as + affected and +affecting simultaneously, since motion verbs have both these specifications. However, the transition that occurs with respect to the spatial location obtains by virtue of the coloring specification, i.e. the leg movements. In this sense the spatial movement is dependent and does not occur completely by itself.

The requirement that the occurrence of a small clause is dependent on an affecting item in subject position is not only valid for the occurrence of resultative small clauses with intransitive verbs, but applies to transitive verbs as well. Thus, (56) is out, due to the lack of coloring and control on behalf of the subject:

(56) **Der Hammer brach den Ast in Stücke.*
The hammer broke the branch to pieces.

(57) in contrast, is grammatical since the subject argument fullfills the requirements of a resultative small clause:

(57) *Er brach den Ast in Stücke.*
He broke the branch to pieces.

In (57) the subject argument is understood to be both controlling and colored, in the sense of being engaged in an activity while breaking the branch. Thus, (57) could not refer to an event where the breaking took place because 'he' falls on the branch. Resultative small clauses can also be observed with weatherverbs, as (58) and (59) illustrates, even though they are not controlling:

(58) *Der Wind weht den Schnee in das Haus.*
The wind blows the snow into the house.

(59) *Der Wind wehte den Schnee vom Dach.*
The snow blew the snow from the roof.

Constructions as in (58) and (59) are possible due to the activity like nature of the subject argument 'wind', making it similar to the colored subject arguments of verbs such as 'swim' and 'run'.

Furthermore there seems to be a general requirement that no two resultatives may be expressed in one sentence which explains the ungrammaticality of (60):

(60) **Er rannte sich warm in den Wald.*
He ran REFL warm *into* the forest.

Thus, although the predicative "into the forest" differs from the resultative "warm" in that it obtains naturally as the result of the verb's criteriality, it is nevertheless a resultative, and for this reason (60) is ungrammatical.

3. Conclusion

I have shown that the argument of verbs traditionally considered ergative in the syntactic sense, can not only be characterized semantically but also that their grammatical behaviour can be explained and accounted for through semantics. The behaviour of ergative verbs as it reveals itself through standard ergative tests such as the choice of *sein* as auxiliary and the prenominal use of the past participle is dependent on the presence of the feature +transitional in the semantic specification of the verb, which results in the argument becoming +affected. In the case of the prenominal past participle, the transition has to be completed in the sense of having an endpoint. Resultative constructions, which are held to function as an ergative test in other languages such as English, have also been accounted for without making reference to syntactic positions or functions. As a consequence of this and since there is no visible syntactic distinction between the two classes of intransitive verbs that allegedly supports the EH, I conclude that the two verbclasses only differ semantically, not syntactically. Therefore, ergative verbs have subjects even at the level of d-structure, and their only distinctive characteristic is that they express a transition.

Thus, the semantic characterization of a verb does not result in the argument of a verb being realized as an object but has direct impact on the grammatical behaviour of the verb and its argument. Taking such an approach makes it unneccessary to sidestep the facts by resorting to the EH and enables us to give a straightforward account for intransitive verbs and their behaviour.

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The Monotonic Participant

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0. Abstract

In this paper, a system relating a certain participant, called the monotonic participant, to the verb through aspectual features is sketched. The monotonic participant plays a crucial role in being the participant with which a monotonic change described by the verb is construed. A scale is used as a picture of the monotonic change, and thus relates to the monotonic participant. Delimitedness of the gradual change is pictured by the finiteness of the scale. For the aspectual interpretation of the clause, delimitedness counts as the step below telicity, the two properties only being mediated by the qualification that the monotonic participant must be of a specified amount. The definition of the monotonic participant through aspectual features is a contribution to a better understanding of the semantic role called the thematic role theme (starting with Gruber (1965)).

Two principles are derived in the system, semantically restricting the environment of the verb, and narrowing down the syntactic possibilities of constructions.

The examples will be from Norwegian if not specifically stated .

1. The Scale

A monotonic and homogeneous (part of an) event is an event that may be viewed as a change or traversal with regard to no more than one parameter or property. Such an event will be conceived as taking place relative to a scale, similar to what is done by Tenny (1987). The scale is provided by the verb describing a monotonic event. Generally, the change is the succession of degrees from time to time on the scale such that the sequence is monotonic, and a monotonic change will take place with a participant with regard to that scale. In many cases the scale of the verb is latent, and it has to be brought out by a constituent that is related to the scale.

Verbs like *spise* (*eat*) establish a scale, but the scale has to be brought out by the participant that relates to the scale, in order for the scale to be visible. The reason for this is that if the verb is used without such a participant, as in (1),

(1) *Jan spiste (raskt/som en gris)*
Jan ate (quickly/like a pig)

the part of the meaning of the verb that involves the various parts of the activity, like the movement of the jaws, the chewing, etc. are focused on, and these activities are not the part of the meaning that is construed as a scale. The monotonic part of the meaning of the verb, and hence the aspect that underlies the scale, is the gradual elimination of an entity. This aspect of the meaning of the verb has to be brought out by the direct object, like in (2):

(2) *Jan spiste brødskiva*
Jan ate slice-bread-the
Jan ate the slice of bread

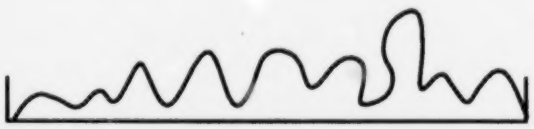
That scale is then applied to the direct object, which is then the monotonic participant of the construction. This is illustrated in fig. 1, where /// is the mass of the bread, and] marks the end of the mass, an end that is mapped onto the scale. The scale may be described by the stating of the type of change:

fig. 1

elimination / time >|----------spise----------|
[////////brødskiva///////]

Not all activities can be described on a scale, however. The events of verbs that describe an activity that is inherently heterogeneous do not fit into a scale, since a scale per definition is stretched out with regard to no more and no less than one property. Verbs like *hoppe (jump), sprette (bounce), løpe (run), rulle (roll)* have a heterogeneous interpretation that cannot be described as a change or traversal along a scale. However, in some languages, like Norwegian, these verbs also have another interpretation, namely that of a change in location, a type of event that <u>can</u> be described in terms of a scale. The connection between these two types of interpretation is that it is possible to move from one place to another by a differentiated movement. This point is illustrated in fig. 2:

fig. 2



The differentiated movement is informally depicted by the upper line of the figure, and as the lower line suggests, the aspect of the meaning that implies a change in location from the start point to the end may be construed as a scale.

What this means is that one of the two types of interpretation with verbs like *run, jump, bounce* and *walk,* one interpretation that does not establish a scale and another that does, can be focused on in different contexts. This is the option for some languages, like Norwegian and English, but not for all, e.g. not Spanish and French, as noted by Talmy (1985). For the languages that have the option of two types of interpretations, the scale of the homogeneous movement, i.e. change in location, is latent and is only made visible by constituents that describe an endpoint or a path of a motion, such as some prepositional phrases and small clauses. This is exemplified with a prepositional phrase in (3) for Norwegian and English:

(3) *Ballen spratt inn i garasjen*
ball-the bounced in in garage-the
The ball bounced into the garage

In section 5 I will show that the verb has general restrictions on it with regard to the type of arguments it can take. These restrictions bear on semantic properties of a scale and the *monotonic participant* described in the next section.

2. The Monotonic Participant

2.1 Monotonicity

I will call the participant undergoing the gradual change the monotonic participant, a neutral name with regard to syntactic structure, since this participant, although often found in object position, also may be found in subject position. A clause expressing a gradual change usually contains a "monotonic" participant in the sense that the participant is the locus for the change or is the participant that the monotonic change applies to. This participant is seen as being related monotonically to the scale of the verb. The participant is viewed as a homogeneous entity undergoing one gradual change, either within the participant itself, or in location, along the scale put up by the verb. In addition, the participant is viewed holistically from the viewpoint of the event described by the verb, i.e. the whole entity denoted by the linguistic expression is affected by the activity, or if the predicate describes a state, that state applies to the whole entity. When a participant is monotonic, it is abstracted away from the internal structure of the entity.

The monotonic participant is opposed to a non-monotonic participant in that the latter is a participant that is differentiated, or heterogeneous, with regard to the event, not viewed as a homogeneous entity. This non-monotonic participant does not undergo a monotonic change, nor does it endure a state. In terms of the scale, the non-monotonic participants cannot relate to a scale like the monotonic participants do, since the former are not undifferentiated over time with respect to the event. The change that occurs in this participant in the course of the event is not characterizable as a change in a single parameter. Rather, the participant *Eva* in the sentence *Eva eats the*

cake undertakes an action that is heterogeneous, in that it involves various steps in order for the action to count as eating, and the "change" in *Eva* is thus accordingly heterogeneous. For *the cake*, however, the change is gradual and monotonic in that more and more of it is consumed. The cake is viewed as a homogeneous entity, i.e. even throughout, with regard to the event. Furthermore, it is the whole entity denoted by *the cake* that is regarded in the event. In this sense, *the cake* is a monotonic participant in this construction.

Often, but not always, lack of control accompanies the properties behind a monotonic participant mentioned so far. An example of a monotonic, and non-controlling participant in subject position is the participant of the verb *falle (fall)*, where the protagonist lacks the controlling property, i.e. cannot control when to start to fall, etc. Often the participant that lacks this property is found in object position, as with the verb *kaste (throw)*, e.g. *Jon kaster Ola opp i luften (Jon ithrows Ola up into the air)*, where *Jon* is the controller, and *Ola* cannot control the event.

2.2 The THEME Role

The notion of monotonic participant may seem similar to the thematic role THEME, as it is traditionally viewed. Gruber (1965) holds that the role THEME is given the object being in motion or being localized. Jackendoff (1990), defining the roles structurally, holds THEME to be the first argument of the functions GO and STAY, i.e. reflecting the intuitions in Gruber (1965). The definition of a monotonic participant involves change of the participant, also change in location. The change may be of other kinds, however, and in addition, a monotonic participant is specified as a participant that is homogeneous with regard to the event, i.e. that the change or state applies evenly throughout the participant, and that the whole participant behaves in the same, undifferented, way throughout the event. Consequently, the definition of the monotonic participant differs from the definition of the THEME role, in a way that I take to be significant for restricting certain combinations of constituents. The limited variations in how a monotonic participant relates to the scale will now be looked into.

2.3 The Monotonic Participant Related to the Scale

A monotonic participant is per definition related to a scale, but the relation may vary as long as it is a holistic, undifferentiated relation between the verbal scale and the monotonic participant. The possible types of scales, and hence the possible roles played by the monotonic participant in relation to scales will be treated in turn below.

2.3.1 A Spatial Traversal Through the Participant

One role of the participant with regard to the scale is as a spatially viewed entity through which the event progresses, like *huset*, the monotonic participant of *male* in (4). Here it is the quality of the participant that gradually changes:

(4) *Barna maler huset*
children-the paint house-the
The children paint the house

In (4) the scale of painted-ness given by the verb is manifested in the house in that it is the area being covered with paint. This is a spatial scale, something is understood as moving through the surface of the house, in order to cover the house with paint. The participant that undergoes the change is viewed homogeneously with regard to the change.

2.3.2 A Qualitative Change in the Whole Participant

A different role played by the monotonic participant is where it supplies the concrete scene for the scale, but where the change is qualitative, and cannot be seen as progressing through the entity, although it takes place in it. A property of the monotonic participant, the property specified by the verb, can be seen as changing, constituting the scale. The change happens all over the entity at the same time, although not necessarily instantaneously. An example is seen in (5):

(5) *De avkjølte ølet i vannet*
they cooled beer-the in water-the
They cooled the beer in the water

The scale is supplied by the verb, and in (5) the scale is coolness, further specified as coolness for beer as opposed to coolness for e.g. wine. In (5), then, the property that is changing gradually in the beer as a whole is the temperature, the lowering of which is inherent in the meaning of *avkjøle*. Other examples are the verbs *ruse (intoxicate), modne (ripen), sovne (fall asleep), rødme (blush)* and *mørkne (darken).*

2.3.3 The Monotonic Participant Changes its Location

The third type of role played by the monotonic participant is when the scale is supplied by the verb as a path which is traversed by the participant. Examples of verbs that imply a path which the participant is to traverse are: *kaste (throw), rulle (roll), arkivere (file), sende (send), skyve (push), falle (fall)* and *skli (slide).* In (6), a construction with skyve is given:

(6) *Jens skjøv vogna*
Jens pushed cart-the
Jens pushed the cart

The participant traverses some path, given by the verb. The scale is thus put up by the verb, and the monotonic participant moves along this scale or path.

2.3.4 The Monotonic Participant is Subject to a Stative Event

If the verb describes a state, it describes a monotonic situation, although the "change" is only the pass of time. A participant that is subject to the state is a monotonic participant with regard to the state and the scale if it is undifferentiated and often non-controlling with regard to the event. Examples of this are seen in the following:

(7) *Ola sover*
Ola sleep
Ola is sleeping

(8) *Janne sitter*
Janne sit
Janne is sitting

A stative scale with a monotonic participant is common for the predicates of small clauses, as will be seen in section 5.

The outline of the four types of scales and their relation to the monotonic participant has shown that even if the monotonic participant plays a different role in these four types of scales, the monotonic participant is undifferentiated with respect to the event, i.e. the change or state is seen as applying to the monotonic participant in the same way throughout the event. The way in which the monotonic participant may delimit the event, i.e. indicate an end of the scale, and how it contributes to telicity, will be the focus of the next section.

3. Delimitedness and Telicity

It is distinguished between a delimited event and one that is telic. These two aspectual properties of the clause are related in that a delimited clause is potentially telic, the telicity being actualized in a clause that in addition to being delimited contains a monotonic participant of a specified amount.

A delimited clause is a clause where a constituent implies an endpoint of the scale in the construction, the constituent then functioning as a delimiter. If a clause is delimited, the change has come to a natural endpoint for the monotonic participant. For the various types of monotonic participants that have been looked at, the type that is traversed, e.g. the monotonic participant of verbs like *eat* and *paint*, delimits the verbal scale in virtue of its mass or area. For the other types, other constituents, like the verb, prepositional phrases or resultative small clauses delimit the scale.

If the event is telic, the monotonic participants of the clause must be of a specified amount. Whether a noun phrase is of a specified amount or not is decided by the determiner and the noun phrase. The term covers what Verkuyl (1989) calls specified quantity of A (SQA), where A is the interpretation of N in NPs. An informal definition of the term may be given like in the following: "Given a set A in the domain of discourse [E], [+SQA]

pertains to a specified quantity, a subset of A, say to A#, where A# $\subseteq$ A." (Verkuyl, 1989:82).

In Gestalt Theory (Hellan and Dimitrova-Vulchanova, forthcoming), the property of the NP which is specified by Verkuyl is called 'specified amount' (SPA), and an NP is [+SPA] if the participant is quantificationally or numerically limited in addition to being individuated. A participant is individuated if it consists of any collection of individuals. This description reflects the definition of Verkuyl given above. I will call this property specified amount, or SPA, as is done in Gestalt Theory.

A telic event cannot be made shorter or be extended and still count as the same event. Telic events have natural endpoints, whereas this is not the case for atelic events. A telic event is framed in to the degree that it is specified exactly how many entities or how much mass reach the endpoint of the scale, the endpoint implied by the delimiter. A telic event is delimited, and in addition, the monotonic participant of the clause is [+SPA].

The constructions in (9) may be used to exemplify the difference between delimitedness and telicity:

(9) a. *They loaded wagons with hay*
b. *They loaded the wagons with hay*

The scale is implied by the verb, being the gradual loading, or filling up, of some material in some kind of container. The participant in object position, the monotonic participant, is the one delimiting the event, i.e. cutting off the verbal scale, which is the case for both (9a) and (9b). In (9a), there is an unspecified amount of wagons that is filled up, but the scale is delimited since each one of the wagons is filled up. Since the monotonic participant *wagons* is not of a specified amount, the event as a total is not telic, since it is not stated how many entities relate (in the same way since they are the same monotonic participant) to the verbal scale, and the filling up of wagons goes on for an unspecified stretch of time. In (9b), the monotonic participant is of a specified amount, and the event is consequently telic.

A further example of a contrast, now with a delimiter other than a monotonic participant is seen in (10):

(10) a. *Han kjører barna til skolen*
he drive children-the to school
He drives the children to school

b. *Han kjører barn til skolen*
He drives children to school

The prepositional phrase in (10a) and (10b), *til skolen* delimits the event. In (10a), the monotonic participant is of a specified amount, whereas in (10b), the monotonic participant is of a non-specified amount, and the event is

atelic. For (10b), then, the number of people who are driven to school is not known, and the extent of the event is thus not known and the event is atelic.

As can be seen from this quick overview, the monotonic participant plays a central role in the aspectual interpretation of a sentence. In this respect the monotonic participant shows interesting contrasts with prepositional phrases. This will be the focus of the next section.

4. Prepositional Phrases

The noun phrase embedded in the prepositional phrase is not a monotonic participant, neither with respect to the verb nor the preposition. If the preposition describes a location of the monotonic participant of the verb, the noun phrase in the prepositional phrase describes the source or goal, or it describes the place where the monotonic participant is situated (undifferentially) throughout, in the manner described by the verb. Participants that are embedded in a prepositional phrase, i.e. indirect arguments of the verb, exhibit behavior that differs from the behavior of the participant that I have called monotonic in relation to the verb. They may be parts of sources or goals, and may delimit the event described only together with the preposition. The delimitedness contrast between the sentences (11) and (12) below can be described in terms of the different relation the participant has to the verbal scale.

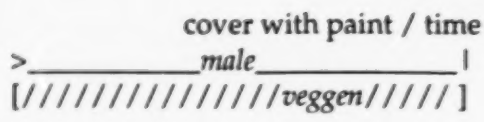
(11) *Jan malte veggen* (delimited)
Jan painted wall-the
Jan painted the wall

(12) *Jan malte på veggen* (non-delimited)
Jan painted on wall-the
Jan painted on the wall

The difference between having the participant in object position and as an indirect argument in the prepositional phrase is that the verbal scale relates to the participant in object position as a monotonic participant, and is activated as a scale by that participant, whereas when the participant is inside a prepositional phrase of this kind, the verbal scale is kept latent, it is not applied to any monotonic participant nor a delimiting constituent, i.e. the PP does not bring out the scale of the verb. The argument inside the PP is not a monotonic participant, rather it further specifies the location of the differentiated event.

The following figure illustrates the relation between the elements of (11):

fig.3



From fig. 3, it is seen that the monotonic participant *veggen* relates to the verbal scale, and the scale of the painting goes on until the wall is all covered, and that is the understood limit to the event. The monotonic participant delimits the event and induces telicity on the event, due to its specified amount. This is not the case in (12), however, since the prepositional phrase given describes a location.

The special thing about these constructions is that the argument of the PP incidentally is affected by the event described by the verb. I claim that the main function of the NP in these construction is to specify a location of a differentiated event, however, not describing what is affected. The adding of a real monotonic participant such as *tre blomster* in (13) substantiates the correctness of such a claim:

(13) *Jan malte tre blomster på veggen*
Jan painted three flowers on the wall

In (13), *tre blomster* brings out the latent scale of the verb and delimits the event. Furthermore, the form of that participant, whether it is of a specified amount or not, and not the argument embedded in the PP, is important for telicity.

So far, this paper has been devoted to sketching a system of scales and participants that serves to pin down properties underlying telicity, and give a connection between the constituents of a construction and how they contribute to the aspectual interpretation of the clause. The verbal scale has been the abstraction for the concept that the other constituents of the clause relate to. In particular, the monotonic participant has been shown to be closely connected to such an interpretation of the verb. Through the connection with the verbal scale, the monotonic participant has been shown to have great impact on the interpretation of the temporal extension of the construction, both as a delimiter, and as the important participant with regard to specified amount and hence telicity for a delimited clause. The monotonic participant has been contrasted with the constituent in locative prepositional phrases, and the interesting differences shown to be possible to represent in the system. In the following, it will be shown that it is possible, through the scale and the monotonic participant, to restrict some possibilities of connecting participants to an event.

5. General Consequences of the Scalar Relations

5.1 The Principles

The monotonic participant fixes the verbal scale in the sense that the scale becomes attuned to the monotonic participant. Even when the monotonic participant does not specify the scale in an obvious way, it always uses the scale according to the role it plays, in one of the four ways possible, as seen in

2.3. A scale, established for example by the verb *falle (fall)* will be traversed by the monotonic participant, e.g. *Ola*, as in (14):

(14) *Ola falt*
Ola fell

This very same scale or path cannot be traversed by another participant as it is attempted in (15)[1]:

(15) **Ola falt bladet*
Ola fell leaf-the

The verbal scale describes a change in a participant. From this relation between the scale and the monotonic participant, it follows that it may only be one monotonic participant relating to a scale, since the scale cannot describe that exact change in any other participant than the one attuned to. Having attuned to, or being specified as being the falling of a person, for instance, it cannot be specified in another "direction", eg. to be the falling of a leaf. Co-ordinating NPs is the only means to avoid there being different specifiction claims drawing the verbal scale in different directions, because the co-ordination serves to make the co-ordinated elements exactly alike with regard to the rest of the sentence. The co-ordinated elements are understood as a whole, counting as one monotonic participant, and we may have constructions like *Ola and Lisa fell.*

The scale system of a construction is restricted to one scale chain. Such a chain can consist of one scale only, or more scales can be related, either in that one is mapped onto the other or that one is the continuation of the other, as stated in the following principle:

(16) **Principle 1: A chain of scales consists of scales that are related in that one is the (semantic) specification or the continuation of the other.**

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[1]Sentences like *Hun gjennomgår rapporten* (*She goes through the report*) can from one point of view be taken to have two monotonous participants, a clear case in object position and a less clear case in subject position. However, the sentence is analogous to *Hun leser boka (She reads the book)*, in that the subject is differentiated. Whereas it is pretty clear in the latter sentence what the differentiated activity consists in (movement of the eyes, internalizing what is written, etc.), the activity undertaken by the subject in the sentence *Hun gjennomgår rapporten* is not as fixed, since there may be many ways to go through a report. Whatever way is chosen, however, some (however minimally) differentiated activity is undertaken. Interestingly, the Norwegian sentence (with the preposition incorporated in the verb) cannot be taken to mean a monotonous change in location, even though the preposition usually implies such a change. Therefore the sentence *Hun gjennomgår huset (She goes through the house)* can only mean that the house is subject to a thorough inspection or action, where the type of inspection or action is understood from the context.

This intimate relation between the scales in a scale chain makes it necessary that only one monotonic participant can relate to the whole chain. The new principle, which is derived from the system, is stated in (17):

(17) **Principle 2: A chain of scales can only relate to one monotonic participant**

In (15), the two participants both try to relate to the verbal scale, i.e. make the scale of the verb attuned to their needs. Since the verbal scale cannot describe a monotonic change in two different participants, the sentence is out.

There are thus one principle for the well-formedness of scale chains, principle 1, and one principle, principle 2, derived from the system, saying that there can only be one participant relating to a scale chain. In the following, further reflexes of these principles will be looked at.

5.2 Restrictions on Resultative Small Clauses

The restriction on scale chains as well as the restriction on monotonic participants in a chain of scales, or a clause, has impact on the formation of resultative small clauses. The resultative small clause needs a monotonic participant to which the change applies. Either a monotonic participant present in the simple construction without the resultative small clause is used, or a new monotonic participant is introduced. These two possibilities are exemplified below, with (18) showing a resultative small clause with the participant that could have been used in the simple construction, and (19) introducing a participant that can not serve as a monotonic participant in the simple non-resultative small clause construction:

(18) *Jan kastet ballen opp i treet*
Jan threw ball-the up in tree-the
Jan threw the ball up in the tree

(19) *Jan spiste kjøleskapet tomt*
Jan ate refrigerator-the empty

In (19), the activity of eating goes on until the point implied by the resultative small clause, i.e. until the refrigerator is empty. The predicative in the small clause establishes an independent, stative scale, for the small clause predicate in (19), a scale of emptiness that extends in time.

If the subject of the resultative small clause is the type of entity that usually serves as a direct object, the scale of the verb is the scale describing the event leading up to the result described by the small clause predicate, and hence forming a scale chain with the stative scale of the small clause predicate. This is the case for the construction (18).

Principle 1 explains the following contrast:

(20) **Glasset falt i stykker*
glass-the fell to pieces

(21) *Glasset falt ned*
glass-the fell down
The glass fell down

Since *i stykker (to pieces)* is a particular quality description, and falle (fall) establishes a scale of change in location, (20) is out by principle 1. *ned (down)* describes a scale that further specifies the location, and thus (21) is fine.

The special property of a construction with a resultative small clause is the relation the monotonic participant, i.e. the subject of the small clause, has to the predicates. This participant is the participant towards which the action is aimed in the way described by the small clause predicate. In (19), the refrigerator is not the entity being eaten, it is the entity that is empty as a result of the eating. The participant is a monotonic participant in relation to the scale of *tomt (empty)*. Verbs that normally do not combine with a direct object also have the ability to connect with resultative small clauses. Take the sentence in (22):

(22) *Ola hoppet seg varm*
Ola jumped refl. warm

The resultative small clause predicate always introduces a (stative) scale. For (18) it is a state of being situated in the tree, for (19) it is a state of emptiness, and in (22) it is a state of being warm. If the monotonic participant is not one that could trigger the scale of the main verb, the presence of the monotonic participant and the predicate in the small clause and the verb in the matrix clause together result in the construction of another scale. On the time axis, this scale is prior to and connected to the scale of the small clause predicate, forming a scale chain. With regard to content, the constructed scale describes the gradual change in the small clause subject, gradually reaching the state of being e.g. empty or warm. The time spent on this gradual change passes according to the time spent on the verbal activity described by the verb in the matrix sentence. When the state is reached, the stative scale of the small clause predicate takes over, and the first scale is thus delimited. The small clause subject is then a monotonic participant with regard to both the stative scale of the small clause predicate and the constructed scale of change. The break between the two scales accounts for the delimited reading of such constructions. The sentences above are in addition telic, since the monotonic participant is [+SPA].

A consequence of principle 2 is that sentences like (23) are ruled out, i.e. sentences where both a monotonic participant of the verbal scale and the monotonic participant of the small clause predicate are attempted fitted into one clause, i.e. one chain of scales:

(23) **Jan spiste maten kjøleskapet tomt*
Jan ate food-the refrigerator-the empty

For (23), the latent scale of the verb is brought out as the scale leading up to the result described by the resultative small clause, since the monotonic participant *maten* refers to an entity that is a normal direct object of the verb. The participant *maten* thus relates to the scale chain, and the other participant relates to the scale of the small clause predicate. When these two scales are to be combined, there are two monotonic participants in the scale chain, and the construction is out.

Other constructions, with the so-called ergative verbs that will be looked more closely at in sction 6, have a monotonic participant in subject position to which the scale is related:

(24) *Jan gle*
Jan slipped

To (24) it is not possible to add a resultative small clause, due to the impossibility of having two monotonic participants in the clause:

(25) **Jan gle rumpa si gul og blå*
Jan slipped buttocks his yellow and blue

5.3 Monotonicity/Undifferentiality as the Decisive Factor

The definition of a monotonic participant rests on the one important factor that the entity must be monotonic (i.e. undifferentiated) with regard to the event, i.e. that the entity is viewed as a homogeneous entity, all the parts of the participants having the same role seen from the view of the verbal event. Secondly, the lack of control has been taken to be a concomitant feature of monotonic participants. This was the case for the participants *maten* in (23) and *Jan* in (25) above, as it is for most monotonic participants. However, that monotonicity is the decisive property of a monotonic participant is seen in the cases where the monotonicity of the participant changes as a result of an addition of other participants. The resultative small clause has this effect on the participants of some verbs. The case where the participant ceases to be a monotonic participant when there is added a reflexive in the subject position of the small clause will now be looked at.

Verbs that take a participant that is controlling but undifferentiated are not numerous, a couple of examples being *komme (come)* and *dra (leave)*. The only possible direct object that these verbs can take is a reflexive functioning as a subject of a small clause, i.e. a noun phrase that gets its reference from the already introduced participant. The possibility with *komme* is seen in (26), whereas the verb *dra* has the possible construction in (28).

(26) *Ola kom seg i hus*
Ola came refl. into house

The verb cannot take a similar construction with a fully referring NP in the small clause subject position. This is seen from the ungrammaticality of (27):

(27) **Ola kom kona i hus*
Ola came wife-the into house

The example with *dra* is seen in (28),

(28) *Fienden dro seg unna*
enemy-the left refl. away
The enemy moved away

With an independently referring NP as subject for the small clause, the sentence is ungrammatical, if not *the enemy* in subject position of the matrix sentence in addition to being controlling is interpreted as being differentiated and hence not have the properties of a monotonic participant:

(29) **Fienden dro oss unna*
enemy-the left us away

The constructions *Jan kom (Jan came)* and *Jan dro (Jan left)* describe a monotonic event, a homogeneous change in location with an implied start or endpoint. The participant that is subject to the event, *Jan*, is consequently a monotonic participant, moving along the scale established by the verb. When a resultative small clause is added, bringing in another participant, as in (26) and (28), the resulting interpretation of the construction is that the event is undertaken with some effort and more will behind it. The event has become more differentiated. There is thus a change from the simple construction without a small clause, in that there has to be a participant that carries the differentiated role. This is done by the subject, and it is hence no more a monotonic participant. The undifferentiated role, i.e. the monotonic participant which relates to the scale of the verb, is now the reflexive, which is coreferential with the subject. The reason why a participant that is not coreferential with the subject does not occur in the small clause of these verbs is that such a participant would not point to the subject and naturally take over the monotonic burden from the subject, leaving that participant free to be interpreted as a non-monotonic participant. Metaphorically speaking, the coreference serves as a bridge for the exchange of properties betweeen the participants in relation in the construction.

A participant can also become more monotonic, as is seen in the following discussion of *run*. One of the two aspects of interpretations of the verb *run*, namely the undifferentiated change in location, is focused on when the verb is used with a resultative small clause describing a change in location. It is the undifferentiated meaning of the verb that establishes a scale that a monotonic participant can relate to, and this scale is brought out by the resultative small clause. Consequently, the participant that undergoes the

event will relate to that scale and be a monotonic participant. However, if the participant in subject position is monotonic in addition to the subject of the small clause, principle 2 will apply in virtue of there being two monotonic participants, since the interpretation is not that the activity of the subject is differentiated. The construction is thus ruled out, as will be seen in (31b) below.

The participant in subject position of the verb is non-monotonic when used alone with the verb, as is seen in the sentence (30):

(30) *Jon løper*
Jon runs

In (31a) below, the interpretation of the small clause puts the focus on the manner of running, i.e. a differentiated activity. The participant in subject position acts, i.e. runs, in such a way that he becomes sweaty. The participant in subject position is therefore differentiated, since the types of leg-movements are focused on, and the participant is non-monotonic. The participant in the small clause is monotonic and relates to the property of becoming or being sweaty. The example (31b) shows the consequence of having the focus on the undifferentiated meaning of the verb: No small clause is allowed if the meaning conveyed by the small clause focuses on the undifferentiated meaning of the verb; this is due to the existence of two monotonic participants in the clause.

(31) a. *Han løper seg svett*
he runs refl. sweaty
He runs himself sweaty

b. **Han løper seg til skolen*
he runs refl. to school

The last group of verbs treated here showing that lack of differentiality is the crucial property for monotonic participants and hence for the application of principle 2, consists of some verbs of natural forces. Although the participant of the verb is not controlling, the event described by the verb is differentiated, i.e. the activity is not monotonic, and resultative small clauses are allowed. An example of this is seen in (32), which contrasts with (33)where a resultative small clause is not allowed.:

(32) *Vannet skyller sporene bort*
water-the flushes traces-the away
The water flushes the traces away

(33) **Vannet renner sporene bort*
water-the pour traces-the away

The ungrammaticality of (33) is due to the monotonic features of the subject, since the verb *renne* entails one change only, i.e. a change in location of the participant that undergoes the event. In (32), the event entails more than one type of movement, the participant, the water, has to undergo differentiated movements in order for the event to count as *skylling*. The subject of (32) and the subject of (33) are non-controlling, but only the participant in (33) is a monotonic participant, since it is undifferentiated with regard to the event. This verb is consequently not allowed to take a resultative small clause[2]. The participants *vinden* and *regnet* in the following examples are also non-controlling, but the event to which they are related is differentiated and hence the participants are not monotonic, and as a consequece resultative small clauses are allowed:

(34) *Vinden blåste taket av huset*
wind-the blew roof-the off house-the
The wind blew the roof off the house

(35) *Regnet vasket vinduene rene*
rain-the washed windows-the clean
The rain washed the windows clean

A similar explanation holds for verbs that can take instruments in subject position, such as *kjøre (drive)*.

(36) *Den lille bilen kjørte oss ned*
the little car-the drove us down
The little car drove us down

For something to count as driving, there has to be different actions going on; the wheels roll and the engine runs, thus the event is differentiated. *Den lille bilen* is not a monotonic participant, and a small clause is possible.

5.4 Minimal Differences in Monotonicity

In the following, some examples will be given that will show that a minimal difference in meaning of the verbs has consequences for the possible constructions the verb can take part in. The degree of differentiality, or the lack of monotonicity, will be shown to be the decisive factor.

In Norwegian, there are (at least) three various verbs describing activities prototypically undertaken by small children that do not walk. The verbs are also used more generally. The verbs are *krype (creep, crawl), krabbe (crawl)* and *kravle (crawl, swarm). krype* has a clear and obligatory change in

[2]Some speakers allow for the construction *Vannet renner seg kaldt (the water runs refl. cold)* in the meaning that the water runs for so long that the lukewarm water in the pipes disappears and the fresh cold water starts to pour out. By far the majority of native speakers hold the sentence to be at least odd, however, and I will not go into a discussion on the specific sentence in this work.

location (monotonic change) as a meaning component, the other part of the meaning being that the movement is going on slowly with the whole body close to the ground. *krabbe* also has change in location as one of the meaning components, but the manner of motion is somehow more prominent, more specified, than with *krype*. The verb nevertheless has a clear interpretation of monotonic change (in location) when triggered by a goal phrase, for instance. The third verb, *kravle*, contrasts with the two other verbs, in that the meaning of monotonic change in location is less important than the differentiated activity, since the differentiated activity is so differentiated that it often influences the type of change in location that may be a consequence of the activity. To illustrate some of the difference between *krype* and *krabbe* on the one hand and *kravle* on the other, a train, which has very limited possibilities with regard to differentiated (non-monotonic) activity, can *krype* and *krabbe* up a hill, but not *kravle*.

In the lexicon, verbs must be specified for monotonicity, in the way that *krype* and *krabbe* will be specified so as to have the focus on the monotonic component, whereas *kravle* will not. The variations in monotonicity in the verbs have consequences for their behavior. The consequences for the kinds of resultative (locative) small clauses the verbs can take are seen below:

(37) a. *Jan krøp under gjerdet*
Jan crept under fence-the
Jan crept under the fence

b. **Jan krøp seg under gjerdet*
Jan crept refl. under the fence

(38) a. *Peter krabbet bort til døra*
Peter crawled over to door-the
Peter crawled over to the door

b. **Peter krabbet seg bort til døra*
Peter crawled refl. over to the door

(39) a. ?*Johan kravlet opp på bordet*
Johan crawled/swarmed up on the table

b. *Johan kravlet seg opp på bordet*
Johan crawled/swarmed refl. up on the table

The reason why only the b. sentence in (39) is good, as opposed to the b. sentences in (37) and (38), is that the participant in subject position in (39b) is viewed as a differentiated/non-monotonic participant, hence the construction needs a monotonic participant (the reflexive) in order to assign to it the change described by the resultative small clause. (39a) is questioned because

native speakers take it to be odd, although not totally out. The reason for this may be that the best interpretation of the participant in subject position is that it is differentiated. But then the change cannot find any participant to apply to. The participant in subject position is consequently pressed into the role of being monotonic, a role that is very hard to fill in relation to that verb, and the construction is odd.

These examples show that monotonicity is the crucial property for monotonic participants, being the property that has consequences for the possible form of a construction with regard to connecting with participants[3].

5.5 Verb Phrase Internal Monotonic Participants

We have already seen that, according to principle 2, i.e. that a clause can only have one monotonic participant, a construction with a monotonic participant cannot take a resultative small clause, which introduces another monotonic participant. This, of course, is the case for all constructions, one consequence being that there cannot be two monotonic participants internal to the verb phrase, as is shown in (40):

(40) **Ola spiser maten middag*
Ola eat food-the dinner

The two participants verb phrase internal in (40) cannot be interpreted as non-monotonic participants, but if they both are to be monotonic participants they need to relate to a scale, which is not possible for both of them in the same clause. Hence, what is traditionally stated as a restriction on each verb according to its valence, may be seen as a consequence of principle 2 in cases like this.

Two noun phrases internal to the verb phrase is only allowed if one is not a monotonic participant, and there is no other monotonic participant elsewhere in the sentence. Two candidates for non-monotonic noun phrases are indirect objecs and cognate objects, and the following examples show that constructions with two verb phrase internal noun phrases do occur, still obeying principle 2. Example (41) shows a construction with a non-monotonic participant in subject position, an indirect object (*Ola*), in addition to a monotonic participant in form of a direct object (*en ørefik*):

(41) *Jan ga Ola en ørefik*
Jan gave Ola an ear-cuff
Jan gave Ola a cuff on the ear

---

[3]Some constructions appear to have two monotonous participants, due to an obligatory reflexive, which also is obligatory when forming a resultative small clause. Such constructions are *reise seg* (*rise refl.*), *åpne seg* (*open refl.*)and *flytte seg* (*move refl.*). The reflexive in these constructions are not monotonous participants, however, as a matter of fact they are not arguments of the verb at all. Hellan (1988) analyzes these reflexives as non-argument [seg]np, or 'inherent reflexives' (Hellan 1988, pp. 106-129), an analysis that will be adopted here.

The indirect object specifies who profited from or suffered under the activity described by the verb, and does not claim a relation to the verbal scale in the way the monotonic participant does, i.e. the verbal scale does not attune to the the indirect object as it does to the monotonic participant. Many indirect objects represent the endpoint of the scale to which the monotonic participant relates. This is the case in (41) above, where *Ola* serves as the goal of the activity of giving, hence constitutes the endpoint of the scale. The occurrence of one such participant and one monotonic participant hence does not violate principle 2.

Now I turn more specifically to the ergative verbs to see how they comply with principle 2.

6. Consequences for Ergative Constructions

6.1 Ergative Constructions

Take the sentences in (42) and (43):

(42) *Jon spiser*
Jon eat
Jon is eating

(43) *Trillebåra triller*
wheelcart -the roll
The wheelcart rolls

In the literature, the obligatoriness of participants like *Jon* in (42) is acknowledged as natural, as is the assumption that this participant must be put in subject position of the verb since the filling of that position is obligatory in the language. It is not acknowledged in the same way that participants like *trillebåra* in (43) is obligatory and that the force behind the event is not stated. The behavior of the latter verbs with the undergoer in subject position are taken to be very special, in that the verbs do not admit any participant in object position, and that they in some languages select certain auxiliary verbs, and do not passivize, etc. In the syntactic framework Government and Binding, these verbs are called ergative verbs.

I claim that the semantic properties of the participants in subject position of the ergative verbs are exactly the properties of the monotonic participant, such as undifferentiality and relation to a scale of change or state. This will predict the behavior taken to be special for ergative verbs.

6.2 The Monotonic Participants of Ergative Verbs

To find a group of verbs that generally are taken to be ergative is not easy, since most linguists base their definition on syntactic tests, and different tests claim ergativity for different verbs. The verbs in (44) are examples of verbs that are often regarded as ergative verbs, however:

(44)	*dø (die)*	*rødme (blush)*
	skje (happen)	*eldes (age)*
	skli (slide)	*falle (fall)*
	sovne (fall asleep)	*flyte (float)*
	stige (rise)	*gli (slip)*
	synke (sink)	*komme (come*

In addition, there are verbs that are usually treated as pairs of verbs. They are phonetically equal, but differ in that one of the verbs take two participants and the other only one, and the single participant of the latter is of the type serving as object of the verb with two partcipants:

(45)	The verb	Transitive	Intransitive
	koke	*Jan koker vann*	*Vannet koker*
		(Jan boils water)	*(The water boils)*
	modne	*Sola modner eplet*	*Eplet modner*
		(The sun ripens the apple)	*(The apple ripens)*
	rulle	*Ola ruller steinen*	*Steinen ruller*
		(Ola rolls the stone)	*(The stone rolls)*
	smelte	*Sola smelter isen*	*Isen smelter*
		(The sun melts the ice)	*(The ice melts)*

The "type" of participant serving as object for one verb and subject for the other verb in the pairs in (45), is the monotonic participant. The same type of participant is seen in the subject position of all the verbs in (44). The participant is related to the scale of the verb in one of the senses described in section 2.3, as opposed to the participants in subject position in the transitive examples of (45). The monotonic participant is viewed as a homogeneous entity undergoing one gradual change, either within the participant itself, or in location, along the scale put up by the verb. A generalization for the verbs in (44) and (45) is that they obligatorily select a monotonic participant, and the verbs in (44) and (45) differ from each other in that the verbs in (45) may take a non-monotonic participant.

A classification for Norwegian ergative verbs is seen in Sveen (1990). He uses the definition of ergativity, from Lyons (1968): "'ergative': the subject of an intransitive verb 'becomes' the object of a corresponding transitive verb, and a new ergative subject is introduced as the 'agent' (or 'cause') of the action referred to." (Lyons 1968:352). Ergative verbs, according to Sveen (1990:28), are thus those verbs that show alternation between transitive and intransitive use, as in (45). According to him, they have in common that the intransitive construction cannot put anything in object position, exemplified by the ungrammaticality of the sentences below:

(46) **Isen smelter vann*
ice-the melt water

(47) **Ballen rullet seg inn i stua*
ball-the rolled refl. into living room-the

Following Keyser and Roeper (1984), Sveen takes the ergative versions of the pair to be specified as intransitive in the lexicon, although it is seen as derived by a lexical rule from the transitive version, leaving a lexical trace in the object position of these intransitive verbs. The reality of these traces is supposed to be asserted by the fact that these verbs cannot take any object.

A question arises as to why there are other verbs that cannot take any constituent in object position, although they cannot be argued to have a (lexical) trace in object position, excluding another object. In (44) above some examples of verbs in Norwegian were shown that cannot take any constituent in the object position, and do not have a phonetically equal transitive counterpart where the subject of the intransitive version is in the object position of the transitive version. Also, some of the verbs have a transitive counterpart that is similar to the intransitive, but not identical: y *faller-* x *feller* y (x *makes* y *fall*), x *synker-* x *senker* y (x *makes* y *sink)*. The verbs in the list (44) and others behave in the same way as the intransitive version of the verb pairs that have equal phonetic forms, i.e. they cannot take a direct object:

(48) **Båten synker mann og mus*
boat-the sink men and mice

Furthermore, the verbs in (44) share some important semantic properties with the intransitive variants of the ergative pairs as already has been emphasized: The participant of the construction is viewed as a homogeneous entity, and the event involves the whole participant, in the sense that the whole participant undergoes the action. In the analysis of Keyser and Roeper which Sveen adopts, verbs are not subject to the same restrictions, and even the ergative verbs are split up in groups according to their phonetics, supposedly predicting that the verbs that have both a transitive and an intransitive variant cannot take a direct object. My semantic criteria and principle capture the behavior of verbs that do not even have a phonetically close transitive counterpart, such as *stige (rise), mørkne (darken)* and several others, since all clauses are restricted to having only one monotonic participant.

6.3 Passivization and Ergative Verbs

A test that often is taken to detect an ergative verb is the failure of passivization. The constructions that are discussed in this respect, are constructions that only has a monotonic participant, which is never a cause of an event, but rather the participant enduring the change described by the verb, as in (49):

(49) *Ballongen stiger*
ballon-the rise
The balloon is rising

The constructions have no stated cause, and consequently there is no cause to surpress, which is what the passive derivation does. Therefore it is the requirements for a passivization that is not fulfilled, ruling out passivization for constructions with only monotonic participants, as seen in (50):

(50) **Det blir steget (av ballongen)*
it is risen (by the balloon)

In this section it has been shown that there are certain restrictions on the semantic relationship between monotonic changes represented as scales in a clause. Also no constructions may have more than one monotonic participant. This latter point has an impact on in particular the formation of resultative small clauses and ergative constructions. It has been shown that the verbs that are treated as ergative have the property in common that they have a monotonic participant in subject position. From that observation it follows that there cannot be any other monotonic participant construed with the construction. These verbs thus behave in the same way that was shown that other verbs do with regard to the restriction on monotonic participants, and no special mechanism has to be constructed to take care of these verbs. It has also been suggested that the semantic properties of the participant in ergative constructions makes it impossible for these constructions to undergo a passive derivation. Further research will show whether other types of behavior taken to be special for ergative verbs may be explained through the monotonic participant.

7. Conclusion

In this paper, a system of scales and participants has been outlined. A particular participant, the monotonic participant, has been shown to play a crucial role, in being the participant with which a monotonic change which may be part of the meaning of the verb is construed. Especially one principle that is derived from the system has been shown to have impact on a vast range of constructions, stating that only monotonic change in one participant can be expressed in a clause. The definition of the monotonic participant in aspectual terms thus shows some promise for the specification of the widely used and m,isused thematic role theme, and its use in grammatical explanation.

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Semantic information in *se*–constructions in Spanish.

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I. Introduction: The case of *se*:

The field of clitic constructions[1] in Spanish is broad and only some phenomena related to *se* are well investigated. Particularly Government and Binding linguists have researched the field touching clitic placement and syntactic status in the late decades. In my approach I will take a different view and look at constructions where the clitic is used anaphorically related to the subject, concentrating on the additional information that the clitic gives, which is not understandable barely on syntactic grounds.[2] A glimpse of the field I want to cover can be exemplified with the sentence pairs in (1)

(1) a. María duerme bien.
Mary sleeps well.

a'. María se duerme bien.
Mary falls asleep well.

b. Juan vuelve al cine.
John comes back to the cinema.

b'. Juan se vuelve al cine.
John returns to the cinema.

c. Comían la pasta en silencio.
(They)were eating the pasta in silence.

c'. Se comían la pasta en silencio.
(They)*se* were eating all the pasta in silence

The information conveyed in sentences a, b, and c is, essentially, the same as in the counterparts with *se*– a', b', c'. However, the presence of *se* gives an additional bit of information by mentioning the subject through the clitic, either changing aspectual meaning provided by the verb as in a', where "duerme" entails a state, and "*se* duerme" expresses the change from being awake to the state of being asleep. In b', the presence of *se* enriches the basic coordinate system in the semantic structure of the verb. We have only one coordenate point {destination} in b. ("vuelve") •<— and two coordinate points in b'. ("*se* vuelve") •<— •, specifying that the cinema is both the origin and the destination of John's movements. The sentence c'. ("se comían") gives an extra information compared to c. ("comían"), referring to the delimitation of the event; c' expresses the consumption of the totality of the food. In these three cases, we do have other readings than the "pure " reflexive one, depending on

[1] Clitic constructions are understood as phrases or sentences where a non–stressed clitic pronoun occurs.

[2] Curiously enough, the type of construction I address does not receive any unified study in the grammars or linguistic works currently used and/or discused (See Bibliography list). One possible explanation is the extreme fuzziness in the behavior of *se*..

the type of verb and the construction used. The aim of this paper is to shed some light on these types of constructions.

II. Clitics in Spanish.

Verbs accompanied by an object pronoun of the same person as the subject of the verb are known in the traditional grammars as pronominal constructions. They make a significant part of the constructions used in spoken Spanish. Compared with other Romance languages, Spanish shows a higher frequency in making use of the "pronominal constructions", containing both transistive and intransitive verbs. The great productivity of the *se*–constructions is diachronically remarkable, with examples as "jactarse" (boast) and "atreverse"(dare) which where originally (and up to the XVII century) purely transitive verbs, with the forms "jactar" and "atrever".

In modern Spanish, object pronoun system counts both a stressed or "strong" form and a clitic or "weak" form. The reflexive and non–reflexive forms of the pronoun are distinctive only in third person. Some forms which are not relevant to this work are omitted in the overview below:

Person	Number	Stressed forms	Clitic forms
I.	singular	mí	me
II.	singular	tí	te
III.	singular masc.	él	le/lo
III.	singular fem.	ella	le/la
I.	plural masc./fem	nosotros/nosotras	nos
II.	plural masc./fem.	vosotros/vosotras	os
III.	plural masc.	ellos/ellas	les/los
III.	plural fem.	ellos/ellas	les/las
III.	reflexive (sg. and pl.)	sí	se

The Spanish reflexive clitic *se* has a number of puzzling functions: it may be intrinsic, reflexive/reciprocal or a marker of middle form, etc. *Se* can be viewed, as it happens in fact in a number of works, not as a pronoun , but as a grammatical marker, reflex of lexical rules of Inchoativization and formation of reflexive and middle constructions, which gives no direct contribution to the interpretation of the sentence. *Se*–clitic operates in a sentence with DO , having the subject as referent, highlighting the relation subject-object, often as exceptional or surprising.

In Government and Binding theory, it is held that the correlation between the semantic properties of *se* and its grammatical properties is accidental. I will take a different stand, and assume that there is a correlation between grammatical and semantic properties of *se*.. These different properties are connected in the sense that the presence of *se*, through the double mention of

the subject's referent, signalize a stronger participation of the agent and induces an increase in the direction of telicity.

II.1. An overview of *se*–types

I now take a look at the most important characteristics of the types of constructions with *se*:
Reflexive clitics: bound anaphors. The prototypical case has the subject exerting the action on himself. The referent of the subject is represented in the verbal phrase by *se*, and when the verbal morphology is plural, the subject being more than one entity, it is possible to infer a reciprocal reading, so the activity expressed is not carried out on the Agents of it, but on the other participants which also do the same. This ambiguity is avoided using the unambiguously reflexive expressions "a nosotros mismos, a vosotros mismos, a sí mismos" (to ourselves, yourselves and themselves).

"Improper" reflexive clitics. The clitic pronoun is coreferential with the subject as the reflexive clitics and the action is carried out by the subject, but not exerted on itself, as the main feature of the reflexives is . This double mention of the agentive participant leads to a the possibility of getting a bigger register of meanings, in the direction of aspectual features, agentivity, etc. One example with this type of clitic is (2):

(2) a. Se comían la pasta en silencio.
They ate all the pasta in silence.

b. María se duerme bien.
Mary falls asleep well. (easily)

Reciprocal clitics: They basically have the same features as reflexive clitics, but there is a special circumstance: the subject is plural or dual, leading to a double interpretation. The possible ambiguity when using sentences with *se* is clarified using the reciprocal expression "uno(s) a otro(s)" (to each other(s)).

Intrinsic clitics: morphologically equal to reflexive clitics. The characteristics of its distribution are different: the clitic is an inherent morpheme of some verbs, which cannot be inflected without the clitic (quejarse/ *quejar) as shown in (3)

(3) a. Ellos siempre se quejan.
They complain all the time.

b. *Ellos siempre quejan.

The clitic here does not correspond to logical or grammatical arguments of the verb construction at all. It corresponds to constructions in French like "s'evanouir", in Spanish"desvanescerse" (fade, vanish).

Impersonal clitic. There is no person or number concordance between the verb and the nominal element; the verb gets immobilised in III person singular . This construction gives a generic, unespecific, undetermined reading.

(4) a. Se avisa a los usuarios.
'Users are warned' (Warning to the users)

b. Se habla español aquí.
Spanish spoken here.

c. Se habla demasiado en estas fiestas.
One talks too much in these parties.

Mediopassive clitics. Here, the middle voice marker[3] *se* indicates that the minimally agentive subject is affected by the action. Another characteristic is that the subject is inanimate, something that strengthens the impossibility of the subject to exert the action.The subject has no agentive character, sharing with the pattern of the transitive active construction the same form and differing in the suppresion of the agentive subject as exemplified in (5) a.

(5) a. Los escritores publican los libros con facilidad.
Writers publish the books easily.

b. Los libros se publican con facilidad.
Books are published easily.

c. Se levantará un palacio.
A palace will be raised.

II.2. Perspective of the problem

With the section above as a provisional survey of *se*--constructions, we need a proper definition of reflexive constructions in order to sort out the special readings which clearly stand aside of the 'prototypical' reflexive constructions shown in (6):

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[3]In Spanish, as in other indo-european languages, the middle voice is expressed through variuous means to complete the range of activity levels of the subject, as shown in the continuum:

Active	Mediopassive	Passive
Yo abro la puerta	La puerta se abre	La puerta es abierta (por mí)
I open the door	The door opens	The door is opened (by me)

I assume by and large the view of Pitz (87), considering middle constructions as result of the process of insertion of a lexical rule of agent deletion (4. 3).

(6) a. María se peina por la mañana.
'Mary combs herself in the morning'

b. Juan se mira en el espejo
John watches himself on the mirror.

These reflexive constructions indicate that the subject of the sentence and the object (when there is a basic construction) have the same referent, as the traditional grammar postulates. The clitic pronoun *se* has an anaphoric value, with the subject as antecedent .

The use of *se* does not entail at all that we would get a reflexive reading, since this clitic can play a different number of functions. In the case of (7), the clitic pronoun *se* is coreferential with the subject, but the sentence is not a reflexive one.

(7) a. Juan se equivoca.
John gets wrong.

b. Eva se duerme.
Eva sleeps

c. María se va.
Mary leaves.

We can see the clear difference between "proper" reflexive constructions and "improper" ones applying one test of reflexivity, adding the reflexive object "a sí mismo", "a sí misma"(to himself, to herself) depending on the gender of the referent. Spanish allows double objects, also called clitic doubling constructions, and we get the following sentences matching the ones in (6) and (7):

(8) a. María se peina por la mañana.
'Mary combs herself on the morning'

b. Juan se mira en el espejo
John watches himself on the mirror.

a'. María se peina a sí misma por la mañana.
'Mary combs herself to herself on the morning'

b'. Juan se mira a sí mismo en el espejo
'John watches himself to himself on the mirror'.

c. Juan se equivoca.
John gets wrong.

d. Eva se duerme.
Eva sleeps

e. María se va.
Mary goes away

c'. *Juan se equivoca a sí mismo.
John gets himself wrong.

d'. *Eva se duerme a sí misma.
Eva *se* sleeps herself.

e'. *María se va a sí misma.
Mary *se* leaves herself.

In sentences a', b', the presence of the reflexive object proves the characteristic of the reflexive values of *se*; they are grammatical constructions binding the subject, refl. pronoun and object. With the counterparts of (7): c', d', e', the presence of the reflexive object gives an impossible reading, that is repeating the referent through an anaphoric object.

These tests hold also for constructions with the other clitic types listed above, that is intrinsic, impersonal and mediopassive clitics. I give a short exemplification of these three cases.

Intrinsic:

(9) a. Ella siempre se queja.
She always complains.

b. *Ella siempre se queja a sí misma.
She always complain to herself.

The reason for the ungrammaticality seems to lie in the character of the event conveyed by the verb. The complaint comes out and reaches the hearer, if there is any, but the possibility of being both source and target of the complaint is not available. Other examples from this group of verbs like "*jactarse a sí mismo" (to boast to oneself), "*atreverse a sí mismo" (to dare to oneself), "*fugarse a sí mismo" (to escape to oneself) make clear the impossibility of a reflexive reading.

Impersonal:

(10) a. Se avisa a los usuarios.
'Users are warned' (warning to the users)

b. *Se avisa a los usuarios a sí mismo/a sí mismos.
'Users are warned to himself/ to themselves'

For the constructions where the impersonal clitic *se* occurs, the reflexive reading is ruled out as its semantic structure consists essentially of an unespecific, unknown performer of the action. The performing of the action on the subject which performs it, as b. tries to express, is obviously impossible when there is a non–concrete agent.

Mediopassive:

(11) a. Los libros se publican con facilidad.
b. *Los libros se publican a sí mismos con facilidad.

In the case of mediopassive constructions, *se* seems to trigger the non-agentivity of the subject. The clitic appears together with other required components, as the modal complement "con facilidad" (easily); or the existence of an implicit argument, as the agent in (11) a.

But, is it possible to rely on syntactic grounds in order to explain the contrast between constructions with and without *se* ? The answer seems to be no, as the main factor is not the kind of syntactic structure we get, but the interplay between the meanings of the different sentence constructors. In order to seek some lines in common, I will look at the features which change or get affected when we use a construction with "improper"-*se* and its counterpart without the clitic. However, I will first treat briefly one important characteristic of the clitic system in Spanish.

II.3. Some remarks about Spanish

Before I get on with the different relevant features that can vary when using *se*–constructions, it is necessary to point out some grammatical properties. The Spanish clitic system is not arranged by grammatical functions, so it is also a futile approach taking into account Dative or Accusative labels when dealing with clitic analysis and placement. We can see this point in a short example:

(12) a. Te me presentas.
You introduce yourself to me.

b. Te me presento.
I introduce myself to you.

Clitic pronouns are arranged by person, giving the structures: III II I (roman numbers mean grammatical person), being *se* in the first place, independently of the presence of other clitics. However, if the verb is in a non–inflected form, the clitic is postposed and attached to the verb (enclitic). This rule is also applied to the "intrinsic" or "fixed" *se* –verbs (see page 3), with the difference

that in these verbs the clitic must appear in all the well–formed sentences and, in all the other constructions, the use of the clitic is optional.

III. Semantic Features

When getting to an attempt of mapping the relevant features playing a significant function, it is tempting to hold on as many open fields as possible, and letting these interplay freely. I will take some semantic features that clearly perform a vital difference in the verb–pairs and constructions to be the target of this work. The interplay with syntax is obvious , but not within the scope of this work . Some rules dealing with it are left to the end of the article. Some features I regard as central are the set which pertains to aspect, grouping the features telicity, punctuality, control, activeness and participant status.

III.1. Aspect

Aspect refers to the organization, with respect to time, of an event. The distinction between tense and aspect is not always a simple matter and the contrast is also not clearly mantained in the literature. Tense makes reference to a moment in time determined by the context where the expression is used, and aspect does not refer to such contextual information locating the event in time, but to the internal time interval of the event.

When dealing with the issue of aspect, the traditional works distinguish between the lexical part of the verb and the other morphological and syntactic factors. Usually a line is drawn between aspect and aktionsart (referring to the internal event structure), where they are "grammatic-semantic" and "lexico-semantic" categories respectively. Aspect is then, for instance, reflected in the verbal flection. In each of these categories we can distinguish between telicity and atelicity, according to the manifestation of the endpoint of the action or to the lack of reference to it. Aspect is a property which may be viewed compositionally, determined by the interaction of a verb an its internal and external arguments, called here verb basic construction or constellation.

Some secondary values to the categories are the following "Action types": punctual, durative, inchoative, terminative, iterative, ingressive. These classes can be expressed as a lexical part of the meaning or through different verbal phrases.

Spanish distinguishes (morphologically) between two aspectual values, stated traditionally as perfective and imperfective. The binary distinction is far from comprehensive. Some of the aspectual features wich are relevant for this work are the following, taking part in an opposition system:

Habitual ..... Unique
Telic ..... Atelic
Punctual..... Durative
Inchoative..... Terminative
Iterative ..... Non–iterative
Periodic ..... Non–periodic

Aspectual values can be expressed in three ways in Spanish: manifestated by the lexical content of the verb, by means of verb complements or by the presence of verbal prefixes or other particles[4].

In the frame of the Gestalt theory, aspectual features are integrated in the conceptual structure. An image is the maximal unit of this level and it is structured along two dimensions, a temporal dimension encoding aspectual information, and an argument dimension. Aspectual dimension can be viewed as a cluster of properties interacting and contributing to a terminated interpretation of a construction. The term telic can be defined departing from an image of some event E which is modelled by I, and no subpart of E can count as being modelled by I, nor can any extension of E. Telicity may also be viewed compositionally organized with the features listed positively below playing an important part:

[+Transitive]. The clause has both a subject and an object.
[+Affected]. The verb gets this feature when the object enduring the force is directly acted upon.
[+Transcending]. The force of the construction reaches an endpoint, getting its target or changing to a new situation.
[+SPA] (Specified Amount). The participant is individuated (consists of any collection of individuals) and quantificationally or numerically limited.
[+Transitional]. A situation emerges, distinct from and replacing an earlier situation.
[+Punctual]. The event gets realised at a single time point.

The features named above give an effective tool for the treatment of the meaning effects of *se* . Some of them are crucial in order to find any valid explanation, like punctuality or affected, enforcing the telic character of the image. Other features, like SPA are a part of the essential properties of *se* , as I will exemplify later.

The next step is to take the aspectual features which are relevant to the verb constructions called here "improper *se*--constructions" and exemplify the changes which occur to the features according to the presence or absence of the clitic particle.

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[4]see page 14: (16)

III.2.1.1. Telicity

The term telicity used here ranges over constructions and verbs; a telic structure is a developing one; materializing over time and presenting or reaching an endpoint. Recalling the definition of the term,

A Telic event is an event E modelled by I, where no subpart of E can count being modelled by I, nor can any extension of E.

Events can then get their telic value being conceptually determined, by means of the inherent verb meaning. The whole structure can be telic constructionally, depending on lexical properties as well.

III.2.1.2. Telicity in Spanish

Aspectual information about the endpoint of the action expressed by the verb is coined in the terms telic–atelic. Telicity shows the situation conveyed by the sentence as a single whole, a closed structure delimited in time regarding to the conclusion of the event or situation presented. Atelic constructions lack any information about endpoints, not considering the conclusion as a part of the aspectual meaning. A construction can get Telic or Atelic value through the lexical meaning of the verb, verb affixes, verbal phrases or making use of the different tense forms. The tense system in Spanish is specified for the distinction Telic–Atelic through the Perfect – Imperfect tenses as outlined in the figure of the abbreviated paradigme of the indicative (A):

(A)

Imperfective Tense	Perfective tenses
Imperfect Martín hablaba =M. was talking	Preterite Martín habló Martín spoke (and he finished)
Pluperfect Martín había hablado Martín had talked	Anterior Preterite (5) Martín hubo hablado

III.2.1.3. Punctuality

The expression of punctual value, that is, the focussing on the way the realization of the action happens, which is momentaneous, can be given by the construction type, so we get [±punctuality] as characteristic or inherent of

[5]This tense is a perfective pluperfect, expressing an event completed just before a following past event; normally confined to literature and a few expressions in spoken Spanish.

actions, as opposed to states [+durative] – by definition being placed in a time interval –.

The *se*–form conveys a more punctual meaning when it appears in contrast with a durative or less punctual construction. If we take verbs[6] where the presence of *se* does not induce a change of meaning of the verb, the difference with regard to punctuality comes out clearly, as in (15). :

(15) a. Juanita despertaba sin problemas en invierno.
Juanita awoke without problems in wintertime.
Asp. Information:[+Telic] [– Punctual] [+habitual]

b. Juanita se despertaba sin problemas en invierno.
Juanita awoke without trouble in wintertime.
Asp. Information:[+Telic] [+Punctual] [+habitual]

English lacks a simple device to express the different nuances between a. and b. in these kinds of constructions, such as *se* in Spanish, so the translation and the list of aspectual features expressed give a more accurate picture of the message conveyed. The meaning of a. covers the awakening as a process which takes place along in a (undefinite) time extension (probably some minutes), and it is understood that the event reaches its completion. We get thus the aspectual features for the construction a. [+Perfective] and [+Durative]. The imperfective tense form contributes adding a [+habitual] feature to the aspectual information. In b, all aspectual features but the one referred to perfectivity are identical. *Se* induces a change in the stretch of time the situation is placed upon, giving the meaning of an event which happens more or less instantaneously, not focussing on the awakening process, but viewing it as a delimited whole taking place at one time point. (15 b.) gets then the feature [+Punctual].

II.2. "Improper *se*" – constructions

The interplay of semantic features among the constructors in a sentence is the factor that ultimately gives the explanation for the differences between sentences with and without the clitic.

Se stresses the telic value of the verbal action, making the construction [+telic] if it is not, or emphasizing the telic character of the construction otherwise. The transformation of atelic transitive constructions with verbs of movement into telic ones can be seen with one example of the verb "llevar" (to carry, take) in (13).

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[6]Verbs of this type are asomar (look out), recoger (collect), poner (put), colocar (place), situar (situate), elevar (elevate), despertar (wake up), conmover (disturb), apear (get down), detener (stop) , lanzar (throw), esconder (hide), estirar (stretch), mover (move).

(13) a. Los extranjeros llevan la flor y nata.
(The "crème de la crème" is carried by foreigners)

a'. La flor y nata la llevan los extranjeros.

b. La flor y nata se la llevan los extranjeros.
(The "crème de la crème" is taken away by foreigners)

The order of the different complements (with the differences derived by object fronting, that is object doubling), as in a. and a'. can be changed without having modifications in the meaning of the constructions. In a., some information is given, describing an event that unfolds over a stretch of time with no delimitation according to the endpoint of the action (using a perfective tense the value for the construction would be [+ telic]). But in sentence b., the clitic *se* gives a telic value which overrules the atelic one conveyed by the imperfective tense of the verb (let it be present, imperfect or future), understanding that the event is delimited in the sense that the action of "away–taking" is ended.

In sentences (14) a. and b., there is no transformation in the telicity value, as the object is understood as delimited. The contrast between a. and b. lies on the power of *se* to give a telic reading, and the construction being already telic, *se* places it in a higher degree along a scale of telicity.

(14) a. ¡Que lo lleve el demonio !
Let the devil carry it !

b. ¡Que se lo lleve el demonio !
Let the devil carry it all away !

The emphasis or increase of the telic value of the construction gives in turn access to a richer register of information available. In b. there is a focus on the meaning of getting (the whole object) away from the speaker's sight; even more, of suppression, destruction, which can be explained from the maximal telicity of the event.

Several of the meanings of *se* are indeed highly interconnected. Another of them is the expression of punctuality.

III.2.3. State Verbs

Se induces a telic effect in the verbs I have presented up to now, mainly Action verbs. But *se* –insertion is fully possible also with State verbs, and produces a transformation in the aspectual dimension. As the verb lacks any information about Telicity, the force of the construction must either reach an endpoint

"hitting" a target or changing to a new situation. As shown in (16), *se* makes use of the second device giving the feature [+Transitional] to the construction.

(16) a. Juanita dormía a las ocho.
Juanita slept(was sleeping) at eight o'clock.

b. Juanita se dormía a las ocho.
Juanita got asleep at eight o'clock.

In a., Juanita finds herself in a sleeping state at a given point of time, the situation has no specification about the boundaries of the sleeping, so it is atelic. The sentence in b. varies only with regard to *se* , and as the verb cannot express any endpoint, *se* forces the construction to get a telic reading through the feature [+Transitional], thus conveying the change of state with sleep-state as endpoint.

III.2.4. Verbs denoting human abilities

In Spanish, the verbs relating to biological "actions" (only some of them are clearly Action verbs) present a neat opposition between constructions with and without *se* .

(17) a. Juan come el pan. [+telic]
a'. John eats the bread.

b. Juan come del pan. [–telic]
b'. John eats of the bread.

c. Juan se come el pan [+telic]
John *se* eats the bread.

We have available in (17), according to the telicity value: the most unmarked structure in a., understood as [+telic] from the delimited object, [–telic] in b. and c., which is a clear telic construction. What is then the difference between constructions like a. and c.? In these sentences, the direct object represents substance; French is neither as Spanish nor Italian, as it uses partitive constructions like in "boire du vin". Spanish sentences with *se* represent ingestion, enjoying in a total and complete way, a kind of "grand" effect.

(18) a. French: Boire du vin
b. English: Drink the wine
c. Spanish: Beberse el vino.
d. Italian: Beresi il vino.

The constructions getting this telic reading are those where verbs have a direct argument, and in some or other way related to biological actions associated to consumption, perception or knowledge (eat, drink, hear, walk, see, watch, learn, recitate, etc.). I give a short list with some examples in Spanish and the correlation between constructions with/without *se* and their value in the telic feature.

(19) Drink: Ella bebe el vino vs. Ella se bebe el vino.
She drinks the wine – She drinks (all) the (whole) wine.

Eat: Comían pasta en silencio vs. Se comían la pasta en silencio.
(They) were eating the pasta in silence – (They) were eating all the pasta in silence.

Hear: Oye sinfonías vs. Se oye las sinfonías.
He listens to symphonies – He listens to the (whole) symphonies.

See: Mira las fotos vs. se mira las fotos
He looks to the photos– He looks to (all) the photos

Watch: María verá el programa vs. María se verá el programa
Mary shall watch to the program –
Mary shall watch to the (entire) program.

Know: Pedro sabe (muchos) verbos – Pedro se sabe los verbos
Peter knows (many) verbs – Peter knows all verbs
(in Norwegian specified by the verbs kjenne til og kunne).

The expression of a higher degree of telicity can give in some verbs from this "human process" group a considerable contrast opposed to the clause without *se* , as exemplified in (20):

(20) a. María reconoció el terreno en un minuto.
Mary identified the area in one minute.

b. María se reconoció el terreno en un minuto.
Mary recognized the area in one minute.

Both constructions have [+Telic] value. But the one in b. gets more completed with the presence of *se* and the transition gets more powerful. The one in (20) a. means that Mary used one minute to realize that she knew – the whole – area from an earlier time, while in (20) b., Mary examined – the whole – area in the course of one minute.

In all construction types analysed so far , se induces a telic reading, coming out into various expressions depending on the nature of the verb implicated. In stative verbs, the telic value may discharge a change of state; whereas in activity verbs, which can convey a telic reading, the reinforcing of telicity due to the presence of *se* can result in an "extended" dimension of the verb.

Now I will continue the treatment of the same type of constructions and the information expressed but from another point of view, as it can enable us to get a more explicit picture of the semantic relations in *se* –constructions.

III.3. Participant Status

As I have shown so far, there is a (natural) close relationship between *se* and the subject as participants in the construction, their referent being the same. In these constructions the direct object, if there is any, gets highlighted in some way or another. The relevance of the participants in the construction and their interactions is clear; the need lies in some instrument to treat it.

I will make use of the notion of Monotonic Participant as it appears in Tonne . (92) in order to structure these relations and predict the well–formedness of *se* –constructions.

A Monotonic Participant is described as an entity taking part in a construction which fulfil three conditions, the third of them not being always necessary.

The participant is viewed in relation to the event as

(i) a homogeneous, undifferentiated entity undergoing one (gradual) change.

(ii) a holistic entitiy from the viewpoint of the event described by the verb; i.e. the whole entity denoted by the lingustic expression is affected by the activity, or if the predicate describes a state, that state applies to the whole entity.

(iii) Uncontrolling, lacking the the ability to direct the development of the event. In some cases, the entity can control the event and still be monotonic , as in the norwegian sentence *Jon kom seg hjem* ('Jon got himself home').

The conditions satisfied by a monotonic participant are exemplified in (21)

(21) a. Mary carries the child away.
b. Peter glides down the frozen hill.
c. John ate the bread.

The monotonic participants in a.,b., and c. are the child, Peter, and the bread respectively. They can stand in different syntactic position, both subject and object and lack the controlling of the situation in relation to the event, they are

holistic, and all of them are homogeneous in the sense that the change applies evenly throughout the participant.

Regarding Spanish, *se* introduces the other participant in the construction and this fact, together with the reinforcing of telicity give the key to understand the semantic effects in the constructions where *se* appears.

III.3.1 Control

The feature control receives different denominations, as volitional, which are frequently used on diverse fields of linguistic studies. Therefore I prefer not to allude to the "willingness" or "desire", that the term volitional encodes, by operating with Control, as used in the Gestalt approach. We can say that one entity controls a certain situation, this is the capability of voluntarily bringing the situation about, or to an end. The controlling sources are Agents.

Taking a look at the constructions with *se*, we can get the most clearcut differences using the verb "caer" (to fall), analyzing the sentences for some of their main features in (22).

(22) a. Juana cayó sobre su odiado amante.
Jane fell on her hatred lover.

Situation	Aspect	Punctuality	Control:
Action	+telic	+punctual	+Control

b. Juana se cayó sobre su odiado amante.
Jane *se* fell on her hatred lover.

Situation	Aspect	Punctuality	Control:
Action	+telic	+punctual	–Control

In this pair of sentences, the only feature which gives a change in the meaning the construction is the presence of *se* . Then, in a), the target of Jane is to attack her lover, and consequently she does attack him and in b), it is impossible for Jane to avoid falling on her lover, yielding the understanding that it is the product of an unplanned and fortuit incident. So here, in b, through the insertion of *se* , Jane becomes a monotonic participant. Besides the lack of controlling ability in relation to the event, Jane is an undifferentiated entity undergoing the gradual change of position through the falling, and also a holistic one, as no part of the participant avoid being affected by the activity.

Se has a clear effect with regard to the aspectual information conveyed, and I have presented above the greater capability of *se* to give a non–controlling effect on the subject. Meanwhile, it is reasonable to claim that *se* has not any fixed value in respect to the feature Monotonic Participant, but behaves like any other potential participant appearing in the construction. It is the structure

of the construction, built up from the verb basic constellation, which primarily decides the value taken by *se* .

I take now a group of intransitive constructions with verbs of motion, like "salir" (come out), "ir" (go) or "volver" (come back). *Se* gets here the opposite value as in (22) b. regarding [Control]

(23) a. Juan salió de la cárcel.
John went out from the prison.

b. Juan se salió de la cárcel.
John escaped from the prison.

The more salient distinction between the examples in (23) is expressed in the English glosses through two different verbs. In (23) b. there is a stronger participation of the agent (the subject in this case) in the event presented, in the sense that John had to make an effort opening doors, climbing, etc, what is not usually when coming out from jails, while in (23) a., John came out of the prison because the sentence was completed , somebody else opened all the doors for him and his participation in all the different stage of the 'coming-out' was much lower. Juan does not lack control in the action of getting out from the jail, neither in a. nor b. But if we examine both constructions, Juan in a. is a monotonic participant, being homogeneous and holistic as it is an undifferentiated entity undergoing the gradual change of position and the whole entity is affected by the activity. In (23) b. the device used to enhance the degree of activity of the subject related to the event is to insert *se* , which becomes the monotonic participant for the reasons explained for (22) a. , and equivalent to the construction in (23) a. This gives the possibility for John to be maximally active carrying on the event.

The extent of information that *se* makes available varies not only in relation to the degree of participation of the subject, or the telicity value. In (24), the increase of telic value makes the grid of spatial points conveyed in the construction also more completed. This example gets a coherent explanation looking at both telicity and monotonic participant values. I give a schematized diagram or the coordinates expressed:

(24) a. Juan vuelve al cine.
John comes back to the cinema .

{destination}
cinema• ····<·····<·····Path·····<·····<·····

b. Juan se vuelve al cine.
John returns to the cinema.

{destination} {origin}
cinema• ·····<·····<·····Path·····<·····<····· •

In (24) b, the presence of *se* enriches the basic coordinate system in the semantic structure of the verb. We have only one coordenate point {destination} in a. and two coordinate points in b., specifying that the cinema is both the origin and the destination of John's movements.[7]

IV. Conclusion

In this paper I have made an attempt to clarify one part of the rather opaque items that clitics are, specifically the Spanish *se* , occurring in a limited number of constructions. The type treated here, labelled for the moment "improper" reflexive, are at first sight very similar compared too the reflexive constructions, and make visible some of the semantic properties of the clitic *se*.. These properties seem to be clustered in aspectual and participant ones. The implemented use of of the Gestalt Theory as frame and the notion of Monotonic Participant enlightens the interplay among all the features involved and produce a much more tidy prespective than the one given in the traditional approaches (or GB).

This work gives some clues to the direction of further research in the treatment of clitics in linguistic theory, and an interesting aspect remaining to be investigated is how the syntactic behavior interact with the semantic information.

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[7] After the presentation given about the two main factors dealing with the interpretation of *se* -constructions I want to take one of the (after all few) examples that does not seem to be properly explained with aspectual features. The intransitive basic construction in (25) shows it.

(25) a. El tren paró en mitad del desierto.
The train stopped in the middle of the desert.

b. El tren se paró en mitad del desierto.
The train stopped "itself" in the middle of the desert.

(26) a. Juanita murió. ¡ Qué pena !
Juanita died. What a sorrow !

b. Juanita se murió. ¡ Qué pena !
Juanita *se* died. What a sorrow !

The difference of meaning between a. and b., homogeneous for native speakers and grammarians (this is not always the case) is that (26) a. requires some kind of "responsible" agent which directly causes the death (by shooting, etc if it is an animate agent, but it can relate to the "responsible" event of the death, like an accident, suicide, etc.). (26) b. gives another nuance, and it is commonly used when the death is a natural one, or a consequence from an illness or the injures caused by the "responsible" agent, thus being a kind of external cause. The telicity value does clearly not vary and the participant can hardly be defined as more or less monotonic .

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ISSN 0802-3956